

Guidelines for Establishing, Managing and Using Handling Collections and Hands on Exhibits in Museums, Galleries and Children's Centres

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Council of Museums in Wales

East Midlands Museums Service

engage

Group for Education in Museums

London Museums Agency

mda (formerly Museums Documentation Association)

NCCR (National Council for Conservation-Restoration)

North East Museums

Northern Ireland Museums Council

North West Museums Service

Resource: The Council for Museums, Archives and Libraries

Scottish Museums Council

South East Museums

South East Museums (Eastern Region)

Southern Museums Agency

South West Museums

UKIC (United Kingdom Institute for Conservation)

West Midlands Regional Museums Council

Western Cape Education Department, South Africa

Yorkshire and Humberside Museums Council

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Foreword

Resource: The Council for Museums, Archives and Libraries commissioned research into loan services and handling collections to investigate the impact of handling on objects. The aim was to assess whether it is feasible and practical to urge museums to consider the objects that they currently hold in store and assess whether more could be made available for handling. The report has been prepared by education and conservation professionals working together to ensure that the proposals meet the needs of both conservators and learners.

The research has demonstrated conclusively that the risk of damage to objects in loan and handling collections is, if the objects are chosen carefully and managed appropriately, significantly outweighed by the benefits of direct contact. The conclusion we have drawn is that more people should be given the sort of direct contact with objects which, at present, is largely reserved for professional museum staff and approved scholars. The purpose of these guidelines is to identify how to manage this process in order to reconcile the museum's duty to preserve and protect the objects in its care with its obligation to make collections accessible for learning and enjoyment.

Traditionally, the balance in many museums has been on the side of preservation and protection. Where objects have been available for handling they have too often been in the form of replicas, or of material not deemed appropriate for permanent collections. The contention of this document is that there is much in store in museums throughout the UK which could be used to provide more handling for more people. The aim is for all museums to build on the best practice of some to ensure that everyone has access to the experience of direct contact with objects which makes museum-based learning unique.

All movement, display and handling of objects damages them to some extent. Whatever activities a museum engages in will have an element of risk and museums build this in to their planning. It does not prevent them from mounting exhibitions or loaning objects to other institutions or making them available for research. We would like to see a shift towards the "can-do" mentality evidenced by the museums surveyed in this report. This would lead to an acceptance of handling as a normal activity for a museum. Once handling becomes accepted as something which museums routinely offer to visitors, and off-site, then the risk assessment involved in deciding what can be handled, and under what conditions, would become a standard part of museum practice. The benefits from handling are so huge that ways have to be found for making it part of every visitor's museum experience.

All the services contacted had evidence of the impact handling can have. Much of this evidence is qualitative and anecdotal but some innovative services, like Reading Museum Service, have been carrying out research to identify the impact of handling on both informal learning and on learning within the formal education sector.

This report looks at the role replicas can play in increasing people's understanding and enjoyment of collections, but identifies a very limited role for them. Where replicas are used to show what a whole object would have looked like (when only a shard is available for handling), or to provide an experience which would never be available because of the fragile nature of the original (as with replica costume), then they clearly have a role. However, handling replicas can never be as good as handling the real thing and the learning which can take place from a replica has always to be qualified and tested against real objects. If this is true for scholars and for museum professionals then it must equally be true for other users.

For these reasons we feel that access to the real should be a priority and that replicas should only be used where no other solution (such as protecting real objects in Perspex cylinders, as is done at Reading) is possible.

Section one of this report sets out the background and context for this work and seeks to explain the importance and impact of the experience of providing visitors with the experience of handling real objects. Sections 2 to 4 look at some of the issues this raises for the museum, and provide practical guidelines for choosing objects for handling collections and for managing them appropriately. The report also contains case studies which show how the experience of handling real objects can be managed as a normal part of the visitor experience

We hope that museums will use this report to look again at the objects they have in store and examine ways in which they can provide greater access to handling, both in the permanent galleries and as part of their wider service provision. The research has shown that providing access to handling can both improve the visitor experience and be an important tool in attracting new audiences. We also hope that this report will be of interest to specialist libraries and archives.

Sue Wilkinson
Director, Learning and Access
Resource: The Council for Museums, Archives and Libraries

1. Introduction

1.1 Background

Museums have a long history of providing loan services and handling collections. Liverpool was one of the first museums to establish such a service, in 1884, with Sheffield following suit in 1891. In 1889 the newly formed Museums Association had as one of its objectives ‘the preparation (by museums) of small educational loan collections for circulation to schools’ (Rosse Report 1963; Lewis 1989; Hooper-Greenhill 1991). Since then, many local authority museums have developed loan services and handling collections: the loan service at Reading Museum has been established for over 90 years.

Not all loan services have survived unscathed. Many have been affected by funding cuts and some have closed as a result. However, many museums which no longer, or have never, operated loan services, offer handling of original objects either in the galleries, in dedicated spaces or, more usually, as part of their direct teaching service. In addition, the majority of museums have an appointment system when researchers and members of the public can view and handle objects not on display. In some museums a specific time is allocated each week, when people can come in to view the collections and enquire about objects. Some museums offer special tours of storage areas when objects can be touched.

However, until recently, there has been little widespread development in the use of original objects as hands-on exhibits in open access galleries in the UK. In the United States during the 1960s and 1970s, science centres such as the Exploratorium in San Francisco opened and, in 1986, one of the first interactive displays in the UK opened: Launch Pad at the Science Museum. These centres tended to use exhibits specially built for hands-on activities; there was limited interaction with original objects.

Children’s museums in the USA and Canada were the first places to offer the use of original objects for hands-on activities, having been established to promote the educational philosophy of child-centred learning by activity. The first of these was the Brooklyn Museum which opened in 1898 (Hooper-Greenhill, 1991:172:3). The blossoming of these children’s museums took place in the 1960s and 1970s, including the Discovery Room at the Royal Ontario Museum, ROM (Freeman, 1989), which opened in 1977, and the Please Touch Museum in Philadelphia, USA which caters for children aged one to seven, ‘creating an environment where adults and children can learn and explore together’.

The UK has been slow to follow the lead of the US and Canada. The Archaeological Resource Centre in York has offered original archaeological artefacts for handling in exhibition spaces since 1990. The National Museums of Scotland set up a trial discovery room in 1987 using real objects (based on the Discovery Room at ROM) and the Liverpool Museum has made natural history collections available for handling since 1983. Other museums are increasingly realising the benefits of offering original objects as hands-on exhibits in display galleries. The *Centres for Curiosity and Imagination* project, based at Kids’ Clubs Network, is now developing the concept of children’s museums in the UK (Coles, 2000). One of the ‘trailblazer’ projects is a hands-on gallery at the Horniman Museum, London, which will draw on good practice in North American children’s museums.

1.2 Why develop handling collections and loan services?

Handling original objects gives users an enhanced experience of museum collections, with the senses of sight, hearing, smell and touch all being used. Why does this matter? In essence, handling removes physical and sensory barriers for everyone. Its benefits for people with visual impairments, for example, are self-evident, but, in fact, reach much beyond this:-

- It is an inclusive activity, breaking down barriers and encouraging group interaction (McManus: 1987).
- It has a proven track record in reminiscence work.
- Outreach of original objects through loan services and hands-on travelling exhibitions allows people who may not be able to get to the museum to appreciate objects and use them to support their learning.
- Access to real objects can play a powerful role in both stimulating and supporting learning. The National Curriculum emphasises the importance of using a variety of different sources and of introducing children to primary and secondary source material. There is evidence that school visitor figures increase when museums offer a handling facility (see Hertford Museum and Islington Museum (NELMG) case studies), that attainment is raised and the learning of under-achievers is stimulated (see Reading Museum Service case study).
- There is evidence that children who have had an enjoyable experience at a museum will return in holidays and weekends with their parents or carers, who may themselves have negative images of old style museums from their childhood, which have dissuaded them from visiting (MORI, Resource, 2001).

Case studies: Why develop handling collections and loan services?

- ⇒ After *Hertford Museum* launched its teacher's pack and handling collection on 'Housework in Victorian Times' visits from school children increased from 864 in 1997/8 to 1,827 in 1998/9.
- ⇒ Teachers see learning from objects as one of the most significant ways students can access knowledge. 80% of the teachers involved in *Reading Museum Service's DfEE project*, gave this method of learning the highest rating of six out of six (McAlpine, 2000).

1.3 Risks vs. benefits

The message of this study's research is that the benefits of direct contact far outweigh the risks of loss of, or damage to, objects. Some staff might be reluctant to allow visitors free access to the museum's objects, but concerns about security and damage can be mitigated by careful management, planning and assessing individual objects for their suitability for handling in different circumstances. The examples shown below demonstrate how low the risks of loss or damage actually are, if proper guidelines are used.

Sections 2 and 3 of this report provide guidance on putting procedures in place to ensure that loss and damage are kept to a minimum. However, the basic premise of the guidelines is that, for some objects, in some situations, loss and damage are worth risking because of the public benefits resulting from handling.

Case studies: Risks and benefits

- ⇒ *The Archaeological Resource Centre, York*, found that damage to objects was surprisingly small (a leather shoe sole was torn after five years and 250,000 visitors).
- ⇒ *At SEARCH*, the interactive science and history centre at Gosport, only 10 out of 1000 objects available for daily handling, over the last six years, have been completely written off, with 50 items showing some form of wear and tear. (See Hampshire County Council Museum Service case study).
- ⇒ *At Norfolk Museum Service's 'Sensations' exhibition* no objects were stolen over a six month period with 24,000 school visits.
- ⇒ *At the 'Please Touch' exhibition at the British Museum*, it was found that objects of great antiquity could be handled with safety.

2. Establishing an original objects handling facility: policy and planning

2.1 Part of plan

When your museum decides to increase access to collections through direct handling of objects, this should be part of a strategy feeding into broader museum policies, from which action plans are then developed. The strategy may have arisen from consultation with users and non-users, or been decided upon independently or in consultation with the local education authority. Once a target audience has been agreed upon, you will need to consider how its needs can be determined and provided for (see section 3.1).

Before developing a handling programme:

- ⇒ draw up an action plan with priorities and objectives of what you want to achieve;
- ⇒ consider both financial and human resource implications;
- ⇒ in larger museums, consult all the relevant staff in education, conservation, security etc;
- ⇒ include a curator, designer, education officer and conservator in long term and temporary exhibition teams;
- ⇒ consult relevant stakeholders and users both within and outside the museum.

Once the handling programme is established:

- ⇒ ensure procedures are in the collections management policy;
- ⇒ set up regular meetings of the staff to review, assess and evaluate;
- ⇒ consult stakeholders and users to review, assess and evaluate.

2.2 Resources

Establishing and maintaining handling services can be time consuming, and needs careful allocation of human and financial resources. Take account of your museum's existing resources (in terms of paid and voluntary staff available) to manage and deliver the project and financial implications.

Case study: Use of resources

The use of original objects, particularly for handling in a gallery, is most effective when backed up with the availability of knowledgeable, enthusiastic and able staff to help visitors to get most out of the experience. At the *Archaeological Resource Centre in York*, trained volunteers are used as invigilators.

2.3 Education staff on collection and exhibition project teams

It is important that staff with a real understanding and experience of learning and access issues are represented on your museum's collection and exhibition project teams. If you work in a smaller museum, without dedicated education staff, consider asking for help from other organisations such as the Regional Agency, the local education authority or staff from another museum. Learning and access specialists can act as advocates for the needs of the audiences and help decide which objects are considered for handling from an educational viewpoint.

2.4 Rewriting the collections policy

Support the acquisition and use of the collection with policy and guidelines including **collecting guidelines** on:

- ⇒ what should be collected;
- ⇒ who is responsible for collecting items for the handling collection.

Use **documentation guidelines** (part of the collections management policy) to cover:

- ⇒ who is responsible for maintaining the handling collection inventory;
- ⇒ who can use the collection;
- ⇒ how the collection can be used.

3. Establishing an original objects handling facility: issues and practicalities

3.1 Selecting objects to use

The actual objects you select will obviously depend to a certain extent on your museum's existing collections. There is a marked difference between, say, national museums and smaller museum services that may not have the quantity and duplicates of objects available for handling collections. There is potential for collaborations between museums and museums can develop their handling collections where they have strengths within the collection.

Case study: Collaboration

By working together, the *North-East London Museums Group* (consisting of small local authority and independent museums) were able to collect a selection of items that would not otherwise have been possible, could draw on group members' varying expertise and could apply for grants as a group.

Many museums purchase items, which may be unprovenanced, from shops and auctions to supplement handling collections. This is acceptable as long as these objects are properly recorded and numbered; they should be accessioned into a handling or support collection and can then be regarded as ultimately expendable.

If your art gallery or museum collects contemporary works, consider approaching artists to produce objects specifically for the handling collection, as well as providing ones for the permanent collections.

The research shows that a very wide range of different types of objects have been made available for handling by the general public, including all categories of materials from vulnerable organic objects to more substantial inorganic stone sculptures and ceramics. The objects which have been safely handled range in date from the Egyptian Pre-dynastic period to modern pieces. They may not be duplicates and many are often unique items in the museum's collection. Generally, organic materials are most vulnerable to harm from repeated handling, and inorganic materials such as stones, ceramics and metals will be the most robust. Organic objects will be more vulnerable to changes in temperature and relative humidity than inorganic ones. Stuffed animals in particular will suffer physical damage through handling, though it may be possible to commission objects.

The consultation for this project shows few objects being damaged or stolen and that the benefits of handling far outweighed any deleterious effects to objects, many of which would otherwise be held in stores. Many museums have made considerable efforts to open up their stores and make them more accessible, but usually without reviewing the position, to see if there are objects that could form part of a handling collection.

There are strategies for minimizing the theft and damage of objects and by adopting these strategies, there is no reason why you cannot make more objects available for handling.

When deciding which objects to use, take account of handling programme they will be used for and the assessment of each object's suitability for that activity. This is part of the risk assessment process (see section 3.2) balancing the risk to the object as well as the learning potential of that object. This assessment may identify large numbers of objects within your museum's collection that are suitable for free handling, especially when they are found in other museums and fall within their collections management policy.

Case study: Choosing objects for handling collections

'At the ARC there is nothing that an archaeologist can handle that could not be used in an interactive exhibit, in my opinion'.

Andrew Jones, Head of Education at the *Archaeology Resource Centre, York*

Real or replica?

Reproductions or replicas are no substitute for handling original objects. To derive maximum benefit from handling an object, users need to be able to closely examine it, seeing and feeling the techniques that have gone into its creation. Replicas do not convey the weight, feel and smell of original objects, and mass produced replicas lack detail. Their inaccuracy can be misleading, particularly if they are under or over-sized.

Replicas can have a place when an object is incomplete: the original can be closely examined whilst the replica shows the appearance of the complete object. Also, where the original item is too fragile to handle, or where only fragments have been preserved in the archaeological record, replicas can be used in conjunction with the suitably protected original. This is the case with costume where visitors can obtain a lot of pleasure from wearing a reproduction outfit, whilst having the opportunity to look at the original. Overall, the presumption has to be that real objects should be used wherever possible.

Meeting audience needs

A handling collection designed to support the teaching of the formal curriculum will necessarily need to be very different from a handling collection which is designed to support interaction in the galleries or reminiscence sessions or work with particular community groups. The needs, including the learning needs, of the target group will influence the selection of objects, the number of objects needed, the supporting materials provided, the packaging and the way in which the objects are used. What works well with a teenage audience may not work with under fives. It is therefore vital that users and potential users are consulted at every stage in developing the collection and that resources and materials are piloted with target audiences before final decisions are taken. Some objects may have a religious or cultural significance for one target audience which they would not have for another and this needs to be thought through when selecting the objects and developing the supporting materials and interpretation.

Handling collections which are designed for schools will need to support the National Curriculum and it is important to find out from local teachers what children are studying, as well as when they study it and how they would use the objects to support their teaching. Loan boxes for use in schools or handling sessions in the museum need to be geared to meet the needs of a whole class of children which might mean providing objects for as many as 35 children working in small groups of perhaps 5 or 6. The subject area being covered will also influence the number and type of objects needed. Depending on what is being covered in school and the planned outcomes of the session, teachers may want children to be able to make comparisons between objects or to investigate how they were made or to stimulate children's creativity and imagination. The important thing is to involve them in the selection of the objects wherever possible.

3.2 Risk assessment

Risk assessment needs to be undertaken for each object and should cover two aspects: the risk to the public and the risk to the object.

Risk to the public

Use a risk assessment form to assess the potential to cause harm to a member of the public.

- ⇒ It will often be obvious which objects have the potential to cause harm (for example, sharp blades on skates or knives etc).
- ⇒ Less obvious hazards include stuffed animals, which may have been preserved with arsenic in the Victorian period; stuffed specimens should be tested before handling.
- ⇒ Other causes of residual harm include BTA in copper alloy lacquers, residual action pesticides on wood etc. Also, some objects may have received cosmetic rather than structural repairs during their lifetime, and thus be physically weaker than they would otherwise be.

⇒ Some types of gas masks used asbestos for filters and each mask should be closely examined for damage. It should be noted that children should not wear the gas masks. There are specialist firms who will remove the filters from gas masks (see useful contacts section).

Risk to the object

Define the amount of handling permissible for each object. The following checklist suggests factors to take into account:-

- ⇒ its material;
- ⇒ fragility;
- ⇒ age;
- ⇒ rarity;
- ⇒ aesthetic value;
- ⇒ which type of handling activity it is intended to be used for;
- ⇒ and the potential risk of damage.

Examine the object for any existing damage or breaks, which could get worse as a result of handling. Objects in an exhibition are likely to get the greatest wear and tear, as handling will largely not be directly supervised.

Objects are subject to deterioration from light, temperature and humidity, pests and air pollution. Those objects being loaned outside your museum will be at greatest risk of fluctuations in the environment. Within the museum environment, items at high risk would normally have their environment controlled in-case or through air conditioning. For hands-on activities, assess whether an object can withstand being withdrawn from that controlled environment and subjected to changes in temperature and humidity as a result of handling. The following table provides a checklist of environmental factors.

Risks to objects: Environmental factors

Environmental Factor	Associated Risks
Light	Can cause irreversible damage. Organic objects will be most at risk, and particularly the dyes and pigments in textiles and papers. Inorganic materials such as stone, ceramics, glass and metal will be unaffected by light, but could be damaged by heat from natural or artificial light if left exposed in a light source.
Temperature and humidity	Key agents in deterioration of museum objects. Fluctuations in temperature and relative humidity are most damaging to organic objects as they absorb and release water, causing them to expand and contract. It would be unreasonable to stipulate environmental conditions in schools and other institutions, so this aspect will need to be borne in mind when assessing whether an object is suitable for a loan box.
Insect pests	Can be a risk to objects loaned outside of the museum. Only organic objects (feathers, fur, paper, wood, textiles - in particular silk and wool - zoological and herbaria specimens) will be affected by pests. It is advisable to provide a quarantine area for objects returning to the museum or keep the loan boxes in a separate area of the museum from the main collections. It is

Environmental Factor	Associated Risks
	possible that insects could have laid eggs on the objects which could then hatch and 'infect' other objects on their return.
Air pollution (both gas and particulates)	The most damaging source of air pollutants for a hands-on collection will come from storage and display materials.
Dirty hands	Grease, sweat, weak acids and salts on hands can cause metals to corrode and make organic objects more attractive to attack from insect pests, as well as physically making the object dirty.

Your risk assessment can be used to stipulate the amount of handling each object can withstand, allocating the objects into categories.

Case study: Risk Assessment

At the *Please Touch Museum in Philadelphia*, all collection and borrowed objects are assigned to one of three categories to indicate handling status, known familiarly as Red, Yellow and Green. Criteria for care, loans and documentation vary for each category.

An alternative approach, to that taken at the Please Touch Museum, is to accession items into different collections:

- ⇒ the **permanent** accessioned collection to be preserved for posterity;
- ⇒ **support** collections into which accessioned items are regarded as ultimately expendable.

The support collection could include:

- ⇒ replicas and reproductions;
- ⇒ unprovenanced purchases;
- ⇒ props, for example for furnishing period rooms, or constructed interactive exhibits to help with the interpretation of original objects.

Whether in the permanent or support collections, you can further assign objects into various categories e.g.:

- ⇒ objects which are internationally significant or nationally rare and irreplaceable;
 - ⇒ objects which are nationally significant or regionally rare or internationally important but robust;
 - ⇒ objects which are locally significant and central to the museum's collection;
 - ⇒ objects which are useful for demonstration.
- (MGC, 1994).

Please note that this kind of categorisation should not rule out the use of significant items from the permanent collections for handling, but aids the process of deciding the circumstances in which they can be used for handling.

3.3 Minimising risk to objects

There are various ways of minimising risks to objects used for handling. For detailed guidance on preventive conservation for particular collections, refer to the MGC/Resource 'Care of Collections' series (see references e.g. 1992b, 1992c).

- ⇒ **Hand-washing** lessens damage due to dirt.

- ⇒ **Gloves** can be provided for handling objects (bearing in mind that this will reduce the quality of the handling experience). This helps prevent grease, sweat, weak acids and salts, on people's hands, causing metals to corrode and making organic objects more attractive to attack from insect pests, as well as preventing objects from becoming physically dirty. However, there is some evidence to suggest that clean and dry hands could be safer than using gloves. It is possible that the reduced sensation with gloves puts objects at greater risk from rough handling, and that, if gloves are not the correct size for the wearer, the object could be more easily dropped. There is a danger of dirt on cotton gloves being transferred to paper or parchment. Cotton gloves can be abrasive, can get caught and cause damage to paper and media, and can damage objects with weathered or corroded surfaces. Non-powdered nitrile gloves are safest to use with metals, illuminated manuscripts and paper. If a metal object is cleaned immediately after handling, when gloves have not been used, there will be no danger of salts from the hand causing corrosion.
- ⇒ **Protective coatings** can be used. The current practice in conservation is not to routinely apply protective coatings for objects, as they attract dirt and seal in salts and cause damage through removal and re-application and it is difficult to provide a completely uniform coating, without pinholes which could then accelerate deterioration. But for handling collections, especially those in exhibition galleries, sacrificial coatings have been successfully used, as removal of dirty finger marks may be more damaging than removing and reapplying a protective coating, especially from stone objects. Micro-crystalline wax, acrylics and cellulose nitrate have all been used with varying degrees of success (see Walsall case study). A conservator will need to be consulted for recommendations.

Case study: Minimising risk to objects

Walsall Museum and Art Gallery used a coating of Cosmolloid (micro-crystalline wax) for bronze sculptures by Jacob Epstein, which were to be handled by three to five year olds in the 'Start' exhibition (Digger:1996).

3.4 Documentation

You should know what items your museum is legally responsible for (including loans and deposits as well as permanent collections) and where items are located (MGC, 1995). Records should be maintained in line with 'SPECTRUM: The UK Museum Documentation Standard', which represents good practice.

The following records should be maintained as a minimum:

- ⇒ **Entry and Exit Records:** there should be a unique written record of any item that enters and when it leaves the museum.
- ⇒ **Accession Records:** an accession record of items formally accepted into the museum's collection.

If objects are received from the public into a handling/support collection, record them on an entry form. Any items personally acquired for the collection by members of the museum (including purchases) must be recorded on the entry form with the member of staff recorded as the donor (Pedley, 1998). Donors should be asked to agree if an object could be used for handling, and it should be clearly noted on the entry form that the object is for the handling collection (if necessary attach an extra sheet which explains to the donor how the object will

be used and possibly used to destruction). If items are retrospectively used from main collections the original donors should be contacted, if possible, and permission obtained to use the objects for handling.

A list of all objects in the handling collection should be maintained. Minimum information should include:

- ⇒ Unique number/code;
- ⇒ Object name;
- ⇒ Brief description;
- ⇒ Method of receipt i.e. purchase, unknown, donation, transfer from permanent collection;
- ⇒ Address of donor;
- ⇒ Location.

Under the Registration scheme, each accessioned item should be marked or labelled with its permanent identity number. When an item is specifically accessioned into a handling collection, the numbering should indicate this e.g. EC - education collection or H – Handling collection, so it can be differentiated from items on the main accessions record.

Separately accessioned or not?

There is a mixed picture as to whether or not it is best to accession objects for handling into separate collections. Although many museums do have a separate accessions record for handling collections this should not constrain you from using items from the main collections for handling by the public. There is a danger that handling collections can become a repository for unwanted items, so that the objects offered for handling are of lower quality than items available to scholars. In the past, many curators have felt constrained in making objects available for handling because of the procedures for disposing of an object beyond repair, within the Registration scheme for museums and galleries. Although there should be a strong presumption against disposal (to protect the museum's collections), the systems do already exist within the Registration scheme where there are sound curatorial reasons for disposing of an object. This procedure for disposal would be the same as if a researcher or curator damaged an object, or if it was damaged in transit to an exhibition.

4. Using the collection: types of hands-on activity

Broadly, the types of hands-on activities that can be offered by the museum divide into three types:

- ⇒ An outreach loan service where boxes of objects are compiled upon set themes. These boxes are loaned out to schools and other groups, either for handling sessions or for exhibition displays. The handling sessions are led by an individual at the borrowing institution such as a teacher, or the staff of residential accommodation for older people. (See Open Museum and Reading Museum Service case studies.)
- ⇒ Direct teaching sessions with original objects in the museum or elsewhere, led by an education officer or other museum staff member.
- ⇒ Original objects used as hands-on exhibits in exhibition galleries at the museum, which are available to the public to handle without direct supervision.

For each type of hands-on activity there are different considerations which need to be taken into account.

4.1 Loan services

Written agreement

It is essential to have a written agreement between the borrower and the museum which records the objects loaned, and which is signed by both parties. Some museums simply use an mda exit form, but the majority use a form designed specifically by the museum. The agreement should, as a basic minimum, include:

- ⇒ a complete list of the objects, which can be checked on return;
- ⇒ the date by which the objects should be returned (boxes are usually loaned for a set period of a half or full term);
- ⇒ signature of lender and borrower;
- ⇒ information on safe handling and treatment of the objects.

Collection and delivery

Sometimes museums provide a collection and delivery service, or, in some local authorities, the museum is able to utilise an existing system such as a libraries or education department delivery service. If the museum provides its own transport this will have significant resource implications.

If the teachers or other borrowers will be collecting and returning the loan boxes themselves, the museum staff need to be available to dispense the boxes and receive them at hours outside the school day and know the correct procedures for signing in the objects.

Security and checking of objects

Objects loaned for handling off museum premises will be at some risk of theft. This will be the case during transportation to a venue and when actually at the non-museum venue. There will not be the rigorous security systems which are in place in museums, nor the awareness of procedures that need to be followed.

Theft can be minimized by ensuring objects are not left unattended in cars and by adopting a grading system for venues such as that used by the Open Museum, Glasgow.

Case study: Security

At the *Open Museum in Glasgow*, a grading system for venues is used dependent on the facilities for security and environmental control. Grade “A” venues will be suitable for community displays of most categories of object as well as suitable users of unsupervised object handling kits. Grade “B” venues will generally be suitable for cased displays of less sensitive objects only. Grade “C” venues will be suitable for displays only of the most robust and easily replaceable objects unless extraordinary steps are taken to improve their security and environment.

Safe handling and transportation of objects during transit

Obviously, the objects will need to be carefully secured if they are going to be carried by non-museum staff. Any packaging used for transport will also protect the objects at the borrowing institution. Packaging materials can cause serious damage to collections because of harmful vapours or through direct contact with the objects. High temperature and/or high humidity levels will accelerate the process of deterioration caused by the packaging materials and it is this category of objects, used off the museum site, that will be most subject to fluctuations in temperature and humidity.

Archival quality packaging should be used. Objects could simply be packed in nests in archival quality board boxes, wrapped in acid free tissue. A more expensive option would be purpose built aluminium boxes filled with Plastazote (polyethylene) foam into which niches have been cut (as used for Reading Museums loan service). Make sure that either one person using both hands can easily lift the boxes up, or that cases with handles can be carried by one person.

Care of the objects at the venue

As stated above, objects being loaned outside the museum will be at greatest risk of fluctuations in the environment. If a grading system is used for venues, environmental control would be the second main criteria for determining the grading of that venue (see Open Museum case study). Venues should be given guidelines on the handling of objects and information about the environmental conditions in which the objects should be used. A long list of dos and don'ts should be avoided as the borrowers probably will not find time to read them, but the main points should be covered.

Consider organising an INSET twilight session for teachers to market the loan service, and include information on the care of objects. The teachers could introduce the subject to the children as part of the science curriculum; they could focus on materials, and how they change, and the life cycles of insect pests that attack museum objects.

Checking of objects

On their return, the objects in the boxes will need to be checked for loss and damage against the original loan form. Any damage to an object should be recorded and a decision made as to whether the object is still safe to loan out or whether it could be repaired and safely returned to the handling collection. If it is damaged beyond repair, the object will need to be disposed of and the necessary documentation completed.

Information to include with loan boxes

Include the following points on a fact sheet:

- ⇒ Use both hands to carry boxes containing objects.
- ⇒ Ensure objects are replaced in the box in their original packing, placing heavier objects in the bottom with lighter objects on top.
- ⇒ Handle objects using both hands over a firm surface such as a table.
- ⇒ Report loss or theft of an object to the museum immediately. Do not attempt to repair a damaged or broken object, but ensure that all the broken pieces are retained.
- ⇒ Wash hands *before* and *after* handling objects.
- ⇒ Avoid placing organic materials such as costumes, papers, wood etc in direct light or placing them close to sources of heat.

It is extremely helpful for teachers and other groups if boxes include at least some basic background information about the objects. This information could be supplemented with ideas for activities and how to get the most out of looking at and drawing the objects (Durbin, Morris and Wilkinson, 1990).

Other information could include guidance on care and handling of objects and evaluation sheets so that the service can be improved in line with the user's needs.

Charges

There is a mixed picture with regard to charging for the loan boxes. This varies from a free service to charges of up to £10 a week. Consideration needs to be taken of the extra administrative work that may be involved with collecting the fees for the boxes. Some museums operate an annual subscription scheme that entitles each school to a fixed number of loans and sessions with the education officer at the museum. This system reduces the amount of administration involved since a fee is collected just once a year (see Chertsey Museum case study).

Evaluation

It is a good idea to include an evaluation sheet in the loan box, that borrowers can fill in and include with the box on its return. More detailed evaluations can be undertaken, such as interviews with teachers and observations of teachers using the objects with the children (see Reading and Museum of London case studies).

4.2 Sessions led by museum staff, at the museum

Booking

A system of booking will need to be established for schools and other groups and this will have implications for staff to administer. Bear in mind that teachers may only be able to make contact outside teaching hours.

It may be helpful to take bookings by phone and then send a booking form out to the teachers, which should be completed and returned. You may want to ask teachers to send a deposit, or include a clause that payment will have to be made for cancelled bookings. Include basic guidance on planning the visit with the booking form, including:

- ⇒ The size of the school party that the session can accommodate;
- ⇒ Provision for disabled people;
- ⇒ Lunch facilities;
- ⇒ Car and coach parking facilities and details of public transport to the site;
- ⇒ Shop;
- ⇒ Teaching aids which might be available (such as teaching packs, activity sheets etc);
- ⇒ Rules on photography.

Care and handling of the objects

It is important that participants in sessions feel free to closely examine the objects, but there are some basic considerations that need to be taken into account. Teachers may initially be wary of allowing children to handle objects until they are familiar with the use of objects for handling. It often works best to encourage the children themselves to develop guidelines for handling, through careful direction by the session leader. Subjects to consider should be the same as for loan boxes (see above) e.g. examining objects over tables, picking objects up in cupped hands, never picking up an object using the handle, passing objects to neighbours whilst seated, stroking stuffed animals in the direction of their fur.

Checking Objects

The session leader should check for missing and damaged objects as they are returned to their storage cupboard or area. It is important to record and report any damaged or missing objects so that necessary action can be taken.

Charges

This varies from museum to museum with some museums making no charge at all for the service. For schools, fees can be up to £4.00 per child, though the average is £2.50 a session. These charges do not appear to dissuade schools from taking advantage of handling sessions, even for schools situated in areas of high deprivation, especially if the children can walk to the museum (thus avoiding coach hire costs) and the sessions are pertinent to teachers' needs.

Small local authority and independent museums that do not have dedicated education staff may employ freelance educators who are paid from the proceeds of charges made to the schools and other groups.

If the museum is employing freelance staff they will need to ensure that the booking form makes it clear that sessions will have to be paid for unless cancelled in advance. Volunteers can be trained by experienced education specialists to deliver handling sessions.

Evaluation

This is essential so that the service can be improved in line with users' needs. Evaluation sheets are best handed to teachers immediately after the session, and teachers should be asked to fill them in straight away to ensure a high return rate.

4.3 Original objects used as hands-on exhibits in display galleries

Security and Damage

All objects on open display, whether available for handling or not, will potentially be at risk from theft and damage. The case studies in this report illustrate how different museums have tackled this issue. Points to consider include the following:-

- ⇒ By using niches in which the objects sit, invigilators can see easily if an object is missing. It also provides extra protection to the objects (see Reading and Southampton case studies).
- ⇒ Completely fixing small objects down may make them more liable to damage if people attempt to try and pick them up (see Museum of London case study).
- ⇒ Spring tensioned tethers allow objects to be picked up and handled but not removed (see Victoria and Albert Museum case study).
- ⇒ Clear sight lines in the gallery allow objects to be observed by gallery staff, and carers can see their younger children at different activity stations.
- ⇒ Placing objects in cages or booths not only prevents them from being completely removed, but also protects them from breakage (see Victoria and Albert, Reading, Chertsey and British Museum case studies).

Labelling

Museum visitors, in particular adults, may initially be reluctant to handle original objects, and they may also be wary of allowing their children to touch them. Conversely, once the visiting public have become accustomed to handling objects, confusion may arise between objects on open display which can and can not be touched (as it may be undesirable or unpractical to place an object, which is deemed unsuitable for handling, in a glass case). A separate handling area or gallery could be created so that it is clear that this is an object handling space. Alternatively, staff will need to be available to encourage people to handle the right objects and not touch the potentially vulnerable ones. This approach can be backed up with

clear labelling. Pictograms are more likely to be read than labels and can be understood by children and people with learning difficulties.

Case study: Labelling

On the *Ulster Museum Science Discovery Bus*, a drawing of a hand is used for objects which can be picked up and a hand with a red cross for those which should not be handled.

Conservation

Within the museum, items at high risk would normally have their environment controlled in-case or through air conditioning. If there is no air conditioning, consideration will need to be given to the fluctuations in temperature and relative humidity, that will be created by a large body of people visiting, and the risk assessed for each object. It should be possible to control light levels within the gallery, but objects most likely to deteriorate from exposure to light would also be most vulnerable from physical handling. Again, each object will need to be assessed individually. It may be that for a temporary exhibition programme, objects considered vulnerable from handling could be placed on display for a limited time period, or for a long-term exhibition, items from the collection could be rotated.

As with any exhibition, consideration should be given to the materials used for displaying the objects. Although the build up of gases from display materials will be more critical when the fumes are contained in a closed environment (such as in a display case or within loan boxes), materials used for display stands, flooring materials and paints can all give off potentially damaging gases. It will be necessary to get the materials tested by a conservator or use materials known to be inert.

Accumulated grease and dirt on objects which has been transferred from people's hands can damage objects and be unsightly. Before entering a gallery dedicated to handling original objects, visitors could be directed to wash basins, or wipes could be provided at the entrance to the gallery. Provision of gloves may be impractical in an exhibition gallery. Visitors could be asked to remove rings, which could physically abrade any object, or sleeves could be provided to place over fingers when visitors did not want to or could not remove rings.

Regular checking of the objects throughout the exhibition will need to be undertaken to ensure that objects have not become damaged.

Staffing

At least one member of staff should invigilate an exhibition space with objects for handling. This will provide additional security for the objects, and the invigilator will be able to help the visitor to get the most out of handling the objects.

Evaluation

Front end, formative and summative evaluations should be used to evaluate the effectiveness of exhibitions. There should also be continuous evaluation once the exhibition is open. Museums have used various devices, from simple ones such as comments in a visitors' book or comments by staff, through to informal interviews with visitors, observation and tracking studies, and focus groups.

5. Conclusion

The research has shown that more objects can be made available, for direct handling, by a much wider range of people than happens at present. Museums should look again at their objects through conservation and collection audits to identify artefacts which could be handled. Object handling should not just be regarded as an add-on to a museum's role, but as an activity which is unique to museums and fundamental to the museum experience.

APPENDIX: CASE STUDIES

ARCHIVES

Although these guidelines are intended for use in museums, galleries and children's centres, the first of the case studies (Westminster City Archive) is from the archives domain. It illustrates materials that museums might use and shows an innovative approach to use of these items.

Archives often use a booking system to manage visitor attendances. For certain facilities, such as use of computers or consultation of microform records, an appointments system is used. For some archives, access is by appointment only. Some archive services have small exhibition or display areas and these may be part of a library or museum service to which they are attached, or with whom they share premises. A large part of the information most commonly accessed by members of the public is preserved on microfilm e.g. census returns and parish records etc.

In most local authority archives, users request documents using indexes and catalogues, and once they are given the documents, they are generally free to consult them without supervision, except for the general supervision of the searchroom. There is a more limited amount that archivists are able to do in the way of handling with schools and other groups. Of all the archives in the UK only seventeen have education officers, although many Record Offices have a member of staff with brief for education, even if this is not a full-time role. With the benefit of an education officer archives would be able to offer a more extensive service. Cross-domain working can also bring benefits. As an example, Warwickshire's Department of Libraries and Heritage has a cross-domain education service (Heritage Education) that serves the education needs of libraries, archives and museums in the authority.

1. Westminster City Archives

Westminster City Archives has a dedicated Education Officer. Two hour sessions are offered to school classes primarily at KS2. The sessions offered relate at KS2 to the Tudors, Victorians, Britain since 1930 and local study; KS3 to the Industrial Revolution; and at 'A' level to looking at resources. A resource pack produced by the Archive, 'Celebrating the Black Presence in Westminster 1500-2000', relates activities to other areas of the National Curriculum in particular Citizenship and personal, social and health education.

A two hour session is offered to Westminster schools at KS2 at a cost of £25 a class (approximately £0.80 per head) and to schools outside Westminster for £35/40 per class. The session starts in the meeting room on the ground floor and a mixture of OHPs, photocopies and originals are used with the children. The children are given an introduction about the importance of careful handling, the preciousness of the objects, how natural acids on the hands can damage the documents and the longevity of paper. The usual rules in search rooms are explained to the children i.e. use only pencils not pens. This introduction serves to make the children realise how important and precious the objects are and installs a sense of awe. Some originals are presented to the children in 'Secol' (polyester) sleeves for protection.

For the second part of the session, the children are divided into groups and taken to the search, conservation and strong rooms, where the children can take the large volumes from the shelves and unwrap them. This allows the children to feel the sensation of the leather and parchment. Although all the necessary information can be obtained from photocopies, an important part of the session is introducing the children to the original materials, so a comparison can be made of, say, the weight and feel and smell of paper and parchment. The possibility of using white gloves was investigated, but it was impossible to obtain gloves small enough to fit the children's hands.

Sessions are sometimes led by the Education Officer at the schools and original material, such as Victorian diaries, is used which can be rotated to minimise damage. Undoubtedly the diaries have suffered slightly as a result of the handling, but this is offset by the value of the session to the children.

Unusually for an archive (as Westminster has no local museum) two loan boxes are available for hire by schools. The subjects of the boxes are 'Britain since the 1930s' and 'the Victorians'. In addition to original documents, the boxes are supplemented with objects bought at Antique Fairs.

Sessions are offered to other groups e.g. the London College of Fashion, legal surveyors and chartered surveyors, at a cost of £50 for a two hour session.

Contact: Jill Barber, Education and Publications Officer, City of Westminster Archives Centre, 10 St. Ann's St, London SW1P 2DE
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MUSEUMS AND ART GALLERIES

2. The British Museum

For two months in 1983 the British Museum organised an exhibition 'Please Touch' which was designed for visually impaired people but was also open to sighted visitors.

Objects were selected on the basis of size and tactile interest. Twenty objects were approved by conservators and curators and consisted entirely of stones: marble, basalt, sandstone, jade, granite and porphyry. The pieces dated from the Egyptian Pre-dynastic period (before 3,200 BC to the 19th Century). No metal pieces were used because of the possible damage that could be caused by perspiration from the hands. The objects were examined by the conservators before the exhibition and daily inspections were made. One sandstone relief which had been consolidated lost some tiny fragments but not in the areas of carved detail. A very popular small jade duck's beak was broken off and had to be withdrawn. It is likely that there was an undetectable pre-existing fracture which resulted in the breakage. However, it was possible to repair the break.

Each object was placed in the exhibition on a plinth. Smaller objects were fastened to the plinths with perspex clips. Hand sized objects were enclosed in boxes for security and safety. The boxes had solid sides and backs and were lined with rubber so they could be picked up. The top and back was made from 6mm perspex with two hand holes cut in the front so the

visitor could feel and pick up the object. It was later discussed whether these boxes could have been made with all sides constructed from Perspex so the objects would be more visible. Also, it was suggested that all of the smaller objects could have been placed in one part of the gallery to facilitate surveillance.

The exhibition's success relied on volunteers handing out tissues for wiping hands, ensuring rings and bracelets were removed and helping warders supervise the gallery.

Coles (1984) states that, for visually impaired visitors, the two relief pieces and larger objects were least popular, because of difficulty in comprehending them.

3. Canadian Children's Museum, Quebec

The Canadian Children's Museum is part of the Canadian Museum of Civilisation. The children's museum aims to 'enrich children's lives, to broaden their cultural experience and to provide them with a creative space in which to learn about the world'. Hands-on activities are provided in conjunction with traditional displays.

The collections are registered into two separate categories: the permanent collection and the interpretative collection. The permanent collection consists of artefacts which are held in trust by the museum for the future. The interpretative collection is comprised of: objects which may be used without restriction in interactive hands-on applications such as replaceable contemporary objects, replicas, reproductions and duplicates. The prop collection includes objects to support specific exhibitions, which are not normally included in the permanent or hands-on collection.

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4. Chertsey Museum

At Chertsey Museum in Surrey there is an education assistant who manages 16 boxes which are offered on loan to schools. Objects are collected and returned by borrowers. Approximately 50 loans go out per year. The museum operates an outreach affiliation scheme for schools who are charged £25.75 per year. This fee gives reduced rates for talks, free loan boxes, free standard talks at the museum, a free termly newsletter and tailored teaching sessions.

In handling sessions fragile items are shown to the group. The rarity and fragility of the items is explained and cotton gloves are provided for handling for certain objects. Child size replica dresses have been commissioned for children to try on. Children are not allowed to try on gas masks which have asbestos filters and young children are not allowed to handle the lead toys. Over five years, only a few objects have sustained minor damage.

One gallery in the museum was designed specifically for hands-on use by schools and general visitors, without the need for museum staffing. The room was divided initially into three

areas: Prehistory, Time and the Victorians. However, the Time area did not prove very successful and has been changed into an area on the Greeks, an area in which the museum has strong collections.

At the entrance to the gallery there is a reconstructed archaeological trench with recesses into which the objects are fixed. Flaps can be lifted to view the objects. Some of the objects are protected with a sheet of Perspex, whilst others (e.g. a Neolithic auroch's horn, a piece of Roman Samian ware, a tile, and WWII armour-piercing shell) can be touched.

There is a Victorian cooking range with objects such as a kettle and iron that can be touched. Next to the range is a mangle (the only one in the museum's collection), which has been adapted for use with a perspex shield to prevent children trapping their fingers. Reproduction toys such as a zoetrope can be handled, whilst the originals are on display within a replica musical toy chest protected by perspex.

The gallery was designed with the emphasis on handling original objects, so that activities were inclusive, rather than using computer terminals, which would only be accessible to a few people at any one time.

In the Chertsey Abbey Gallery accurate reproductions of floor tiles from the abbey were made by a local potter. The tiles are set in a frame and can be arranged in patterns. The originals are on display in an adjacent case. Since 1996, when the display was created, none of the tiles have been stolen, but they have become slightly chipped.

The museum has on average 3,000 individual school pupil visits per year.

Contact: Stephen Nicholls, Curator, Chertsey Museum, 33 Windsor Street, Chertsey, Surrey KT16 8AT

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e-mail: curator@chertseymuseum.org.uk

5. Down County Museum, Downpatrick, Northern Ireland

At Down Community Museum, the majority of objects used for handling are duplicates, although items are purchased at shops and auctions and reproduction costume is available for children to try on. For the Viking sessions, which are very popular, reproductions are used due to the scarcity of the material.

7-8,000 school sessions are held per year and 20-30 sessions for other groups. Schools are charged £2 per head for sessions led by the staff at the museum, although general visits are free and no charge is made for sessions for other groups. The museum has a collection of handling boxes for pupils in the primary sector but these are mainly for use on the museum site to encourage children to explore the museum. Only a small number of objects have been damaged including spectacles, a jewellery box and a small lace iron.

A Victorian exhibition is being organised to open in February 2001 which will include a play room with a mixture of originals, replicas and duplicates. The objects will not be secured, but there will be attendant staff in the gallery.

Contact: Linda McKenna, Community Education Officer, Down County Museum, The Mall, Downpatrick, Co. Down, Northern Ireland

Telephone: 028 44615218

e-mail: lmckenna@downde.gov.uk

6. The Education Museum, Wynberg, South Africa

The Education Museum in Wynberg, South Africa is part of the Centre for Conservation and Education and falls under the Western Cape Education Department. Sessions are taught around three main topics: the conservation of the natural, the manmade and the social environment. The Museum is situated in an old school building and has a vast collection of artefacts reflecting the history of education in the Western Cape. Among the displays is a comparative display 'The Old and the New', where, for example, a modern ballpoint pen is placed alongside an original dip-pen. The articles in this particular display are part of the Museum's handling collection and schoolchildren are encouraged to touch these articles during the session. Articles in the Museum's handling collections are original artefacts of which the Museum has duplicates. Because the Education Museum falls under the local education authority, it is automatically offered first choice of any historic objects or furniture when schools close. Other objects are donated by local schools or private individuals.

Much of the Centre's teaching occurs in the Museum, including a popular social environment session 'When Great-Grandmother was at School'. This lesson is held in a reconstructed Victorian schoolroom using original slates and slate pens, ink and dip-pens and reproduction copy books. There is the opportunity for children to dress in reproduction costumes and they get the chance to play games using Victorian toys such as marbles. Cocoa is sometimes served in original tin mugs and biscuits in an original biscuit tin. Another lesson called 'Adventure in Archaeology' involves children digging up genuine but planted African Stone Age tools. Once a year, a multi-disciplinary educational exhibition is arranged around International Museum Day. Many hands-on activities are devised for learners around a specific theme (e.g. 1997: 'Illegal Trade') and these activities are run by staff and volunteers. The presentations of the Educational Museum are available to schoolchildren from Grades 4 to 12 (i.e. ages 9-18 years). About 500 sessions are held each year, involving some 20,000 children and teachers. Of these sessions, about 200 are held in the Museum.

Only one slate has been broken in the twelve years of the Museum's existence and a total of six artefacts have been damaged, more from natural wear and tear than anything else.

Contact: Sigi Howes (Head), Education Museum, 9 Aliwal Road, 7800 Wynberg, Western Cape, South Africa

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e-mail: head@cce.wcape.school.za

7. The Egypt Centre at the University of Wales, Swansea

In the Egypt Centre, there are two galleries with hands-on activities in each. In the 'House of Life' the children closely examine the different materials used by the ancient Egyptians and handle objects made of pottery, stone, faience, glass, wood, metal and papyrus. Children can

dress up as ancient Egyptians in reproduction clothes and handle original objects (gloves are provided for the children to wear). They enjoy the Egyptian hieroglyph writing activity with replica stelae to handle. Children can play *senet* on a replica board and view the original object in case. A popular activity is the Egyptian maths and measuring activity. Children and teachers have commented that, by actively using a different measuring and calculating system, children who do not normally enjoy maths really develop their mathematical skills, through play, without realising it. In the 'House of Death' children can mummify a reproduction body using reproduction amulets and closely examine *shabti* figures. Robust objects, and those with an unknown provenance, are chosen. Reproductions are used for valuable categories of objects and for those which could be dangerous (such as mummified remains). Children handle replica animal and god figures and then guess what the 'animals in the bag are' through touch only. They also make clay offering trays after closely looking and learning about real ones in the gallery.

A charge of £1 per head is made. Photographs are taken of the objects before they are handled and no damage has occurred in two years.

Contact: Carolyn Graves-Brown, Curator, Egypt Centre, University of Wales Swansea, Singleton Park, Swansea, SA2 8PP
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8. Goole Community Museum

At Goole Community Museum boxes of handling material are loaned to schools at no charge. The loan boxes service has only recently been established and is being developed. At the moment boxes can be carried to a museum convenient to the borrower but, as the service expands, the schools library service will be used.

Victorian washing and baking days are organised using original objects and original costume is available for handling under supervision. Reproductions are used in other workshops (e.g. Anglo-Saxon and Roman days) and loan boxes when items, such as Tudor cutlery, are regarded as too valuable. Risk assessments are undertaken on all objects and some machinery on display is immobilised. In 18 months two objects have been damaged: the handle of a vacuum cleaner and a glass spatula.

Contact: Janet Tierney, Museums Officer, Goole Community Museum, Church St, Goole DN14 5BG
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e-mail: janet.tierney@eastriding.gov.uk

9. Grange Museum of Community History, Brent, London

The Grange Museum has a dedicated education and lifelong learning officer and loan boxes are lent out to schools, day centres and nursing homes at a cost of £15 per week. Borrowers are responsible for collecting and returning objects. On average 20 loans go out per year.

Up to 200 supervised handling sessions per year are led by a member of staff. When original clothing is handled children are asked to clean their hands before the session. In the case of delicate items such as costume and toys these are shown to the children and then replicas are given to the children to handle and try on. Over 15 years, a china basin and cast iron utensil have been broken. On display, a telephone cord and jukebox, specifically purchased for hands-on use, were both damaged.

A charge of 50p per child is made for handling sessions led by the education and lifelong learning officer; when these involve using replica costume and the charge cost covers cleaning costs.

In the exhibition galleries original objects are chosen for their relevance to the National Curriculum, and are robust items such as a dolly and tub, range, washing machines, chairs, and tables. The objects are not necessarily duplicates. However a 1930s radio and telephone exchange are partially covered with Perspex to protect them.

Contact: Alice Moore, Education and Lifelong Learning Officer, Grange Museum, Neasden Lane, London NW10 1QB

Telephone: 020 8452 8311

e-mail: alice.moore@brent.gov.uk

10. Hampshire County Council Museum Service (HCCMS)

SEARCH

SEARCH is Hampshire County Council Museum Service's hands-on education centre for learning by discovery, which is situated in Gosport. Schools must pre-book and are charged £65 per group for sessions, which are led by museum staff. Activities are also organised during school holidays for family groups.

In SEARCH for Science, children handle and investigate real museum specimens such as birds, mammals, reptiles and insects. The museum has science equipment including video microscopes for viewing the collections. The sessions are linked to the science curriculum, targeted for KS1 and KS2.

SEARCH for History has hands-on sessions linked to specific units from the history curriculum. The upper floor is divided into four areas. In 'Archaeology for Action', children study excavated objects. In the Victorian room settings, original objects can be handled and reproduction Victorian costume can be tried on. The other areas are a 1930s room and 'When Granny Was a Girl', both with original objects and costume to try on. Apart from reproduction costume, some replica archaeological material is used (and some models are used for amphibians which do not stuff successfully). The children are encouraged to think of rules themselves for handling the objects during an introductory session. Children are asked to wash their hands before and after the session.

Objects which might pose a health & safety risk are not used, such as pewter, asbestos and objects with sharp blades. Stuffed animals are flame tested for arsenic (a method commonly used in the 19th century for preserving specimens).

Objects are examined before and after sessions and any damages are recorded on a sheet. Damage tends to occur occasionally to stuffed animal specimens and objects such as cups, old packaging etc (a glass knitting needle has been smashed and a cup broke along an existing crack line). On average, three or four objects are damaged each year. But only around ten items have been completely written off in five years. On average, up to 270 sessions are organised for school groups each year plus about 32 family sessions.

Coins are mounted in Perspex boxes; as well as preventing damage this also minimises the likelihood of the coins being dropped and lost.

The HCCMS conservators can repair broken objects. Fragile or potentially dangerous objects are handled in sealed boxes or are embedded.

The education staff at SEARCH have a very good relationship with the keepers. The collections management plan for HCCMS specifically mentions SEARCH, when considering acquiring objects for the collections. Items are loaned from the main collections, if requested, for a specific activity. The Head of Museum Education or the History Education Officer are included on the Hampshire History and Archaeology Collections Group and the Natural Science Officer is included in the Natural Sciences Collections Group.

HCCMS have organised hands-on exhibitions on the themes of Bones, 'Discover This' and 'Shoes', which tour around the county.

Contact: Janet Wildman, SEARCH Manager or Ruth Borthwick, Education Officer (Natural Sciences), SEARCH, 50 Clarence Road, Gosport, Hants, PO12 1BU
Telephone: 023 9250 1957
e-mail: musmjw@hants.gov.uk or museum@hants.gov.uk

Milestones

Milestones is Hampshire's living history museum at Basingstoke with hands-on activities. It opened in November 2000, housing a series of street scenes showing a range of artefacts in Victorian and 1930s settings. The displays consist of a mixture of real and replica objects, which visitors can handle. Two activities have been developed for infants - Toys and Discovery. These are structured 1-hour sessions, which encourage the children to get involved in hands-on activities. At junior level, the activities include Victorian Britain and Britain since 1930.

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11. Hertford Museum

In 1998 Hertford Museum launched a pack and handling collection on 'Housework in Victorian Times' for KS1/2 pupils. The pack was produced with professional assistance from the South East Museums Education Unit and its production was partly funded by the Robert Kiln Charitable trust. On its initial launch 1,827 school children visited in 1998/9, in comparison with 864 for 1997/8. Teachers lead the sessions at the museum or the schools can

employ a freelance teacher who is familiar with the objects if they prefer to have a session led for them.

Unfortunately since then the visitor numbers have declined, from 16,184 in 1998/9 to 13,876 in 1999/00 and the number of school children have dropped to 494 in 1999/00. There are many factors, which have contributed to the decline in visitor numbers, including the withdrawal of Hertfordshire County Council's grant to the museum and the retirement of a member of staff whom it has not been possible to replace. The reduction in funding and staffing has meant that it has not been possible to do the marketing and other necessary procedures to sustain the project.

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12. The Museum of London

In 2000, the Museum of London ran a pilot scheme of providing a mini museum of Roman material to 200 primary schools; the full scheme aims to place a mini museum in every London primary and special school. The mini museums include a mixture of real artefacts and replica and support material. The project was evaluated using an in-depth questionnaire completed by 78% of teachers using the box. Teachers were very enthusiastic about the boxes – 92% saying that it had improved their pupils' understanding of the Roman period and 67% saying that it had benefited pupils with special needs. Over half the teachers said they would use boxes in non-history lessons such as science, art, English, geography and design and technology.

As well as the questionnaire distributed to teachers for evaluation, 29 schools were visited whilst they were using the boxes. This observation showed that teachers and pupils gained considerable understanding from using the objects. The pilot project showed the importance of maintaining frequent contact with schools as it was found difficult to motivate all teachers to come to the training courses, although attendance was one of the conditions of taking a loan box. Training was recognised as essential to ensure the boxes were successful and permanently valued by schools. Teachers rated the training courses highly with the majority feeling more confident about using objects with the children after the course.

In 2000, the Museum of London organised an exhibition, called 'High St Londinium', of a reconstructed Roman street, which included shops with reproduction artefacts that could be handled. It was felt that using only reproductions for the exhibition would provide consistency, illustrating how the objects would appear in contemporary use (excavated and conserved artefacts would look very different). The original objects from the excavation were displayed in glass cases at the end of the exhibition.

Some of the reproductions were fixed down and others were tethered using nylon cord. It was found that fixing the objects often resulted in greater damage than if they had not been secured as visitors attempted to pick them up.

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13. The National Museums and Galleries on Merseyside

Liverpool Museum

The National Museums and Galleries on Merseyside covers several sites including the Liverpool Museum, which contains specimens covering both the humanities and sciences. Liverpool Museum was one of the first museums in the country to develop an area dedicated to hands-on access to the collections, the Natural History Centre, which opened in 1988. The museum is currently undergoing a £26 million refurbishment, with HLF funding, to redevelop and expand the Natural History Centre and create the Discovery Centre, a complementary facility to promote access to the humanities collection.

The Discovery Centre will make the humanities collections (archaeology, antiquities and ethnography) available for handling for all visitors, including school pupils and visually impaired people, in a dedicated space created for this purpose. Replica and reproductions will only be used under specific circumstances and the museum is committed to using real objects for handling wherever possible. Both the expanded Natural History Centre and the Discovery Centre will be staffed by trained demonstrators whose job is to encourage interaction between visitors and objects. Visitors will also have access to resources such as video microscopes, book, CD-roms and the Internet. Both centres are now due to open towards the end of 2002.

Over the past ten years, only a few objects have been damaged or lost. A piece of South American pottery was dropped and broken by a visitor and some sherds of Roman pottery have gone missing.

Objects are sometimes mounted in Perspex containers so that they can be looked at closely but not actually touched.

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Conservation Centre

At the Conservation Centre, which is part of the National Museums and Galleries on Merseyside, handling sessions are led by school teachers who are briefed by staff, though sessions can be arranged for other groups. The sessions are designed to bring out conservation issues and introduce ideas of care and treatment, which are linked to the long-term exhibition 'Caught in Time'. Objects are chosen to show damage and wear, or to show how a fragile object can become damaged.

Objects are monitored visually for any damaged items which have become dangerous, but any wear and tear enhances the objects' demonstration of conservation issues. The objects are a mixture of de-accessioned items and objects specifically purchased. Conservators were instrumental in setting up the session.

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14. Norfolk Museums and Archaeology Service

‘Sensations’, an exhibition of artefacts on open display on the theme of water, opened at the Castle Museum in Norwich in July 1997. After five months at the museum, half the exhibition toured to Thetford and King’s Lynn museums. The exhibition was targeted at disabled people, but also was designed to attract schools and family groups. The exhibition was designed in-house, led by the head of the museum education department with staff from display, conservation, front of house and people with visual impairments.

Objects were selected from the social history, art and natural history collections including: an iron lion’s head fountain plate; an early 19th century leather and brass hose; a leather bucket; ceramics; and animals which had been specially stuffed for the exhibition. All the objects could be handled, although some were tethered with cords. Objects were chosen on the basis of their tactile qualities and robustness for handling, and some of the objects were unique to the collection. Over the period of the exhibition no objects were stolen and nothing was broken. Throughout the exhibition there was always a minimum of one member of staff on duty in the area.

After ‘Sensations’ opened at the Castle Museum, funding was obtained to produce a small travelling display which went to six venues – a library, two community centres, and three supermarkets. The six objects selected were similar to, or the same as those from the main exhibition: a stuffed rat, an ocean drum, a pot of sculptured perfumed daisies, a contemporary tea pot, a stirrup pump and a piece of Anglo-Saxon wood (Siliprandi, 1999).

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15. North-East London Museums Group (NELMG)

The museums in the group are a mixture of small local authority and independent museums, the majority of which have no dedicated education staff. It was decided to assemble boxes of original and reproduction materials, which could rotate between participating museums and be used by staff for handling sessions with schools and other community groups. An education sub-committee was set up and each museum was asked to contribute original objects on the two themes of the Victorians and Taking Tea. A grant was obtained from the London Borough Grants committee, which enabled the group to commission four reproduction Victorian costumes, and sturdy aluminium suitcases filled with Plaztazote for safe storage and transport of the objects. The museums in the group all have different strengths in their collection and also benefit from the Museum of London being part of the group, which was able to donate some unaccessioned items of original costume that complimented the commissioned reproduction costumes. By working as a group the

museums were able to collect together a selection of items that would not otherwise have been possible, could draw on group members' varying expertise and could apply for grants as a group.

Contact: Pat Elliott, Loans box co-ordinator for NELMG, 7 Guildford Road, Ilford, Essex IG3 9YB

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Hackney Museum

Hackney Museum is part of NELMG and at present has no site as a new museum building is being constructed. The new museum is due to open to the public in April 2002. Supervised sessions are led by an education officer at schools and other sites in the borough. Approximately 140 sessions are held per year. The objects are checked at the end of each session. There are approximately 500 objects in the collection. These items cover a wide range of materials including potentially vulnerable objects such as fabrics and Victorian oil lamps with glass. Some of the items were de-accessioned from the museum's main collections whilst others (such as costume) have been specifically bought for handling. Since the sessions began in 1998 there has been no obvious damage to the objects. An assessment is made of each object to identify whether it is suitable for the target age group from an educational and health and safety viewpoint. A glass photograph is sealed in a transparent container as it was regarded as vulnerable and potentially harmful if broken. Reproductions are only used when original material is not available, for instance for a session on Beowulf and the Anglo-Saxons. No charge is made for the service.

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Islington Museum

Islington Museum, also part of NELMG, has only one member of staff (the museum manager) and therefore the provision of educational sessions is limited. However, using the NELMG boxes (see above) the museum manager was able to offer handling sessions to schools which were either led by the manager, volunteers or a freelance education officer who was funded from the charge of £2 per child. These sessions proved immensely popular and the museum substantially increased the number of school groups visiting the museum.

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16. The Open Museum, Glasgow

The Open Museum offers handling collections and exhibitions to community groups in Glasgow Museums' catchment area. It has been established since 1991. 1,000 kits go out per year. No charge is made for the service and borrowers usually collect and return the objects themselves unless they are very large. Audio visual material is also included with the objects in the boxes.

The Open Museum Collections management policy has a system of grading community venues at which the loans are displayed, as follows:-

‘Venues will be assessed and graded according to the table below. Grade “A” venues will be suitable for community displays of most categories of object as well as suitable users of unsupervised object handling kits. Grade “B” venues will generally be suitable for cased displays of less sensitive objects only. Grade “C” venues will be suitable for displays only of the most robust and easily replaceable objects unless extraordinary steps are taken to improve their security and environment’.

Criteria	A	B	C
Secure storage available	X		
Staff Supervision of display areas	X	X	
Staff Supervision of venue	X	X	X
Very little historic evidence of theft or vandalism	X	X	
Easily adjustable light levels	X	X	
On-site 24hour security/regular patrols	X	X	
Secure perimeter	X	X	X
Capacity for local environmental control	X		
Intruder Alarm	X	X	

‘A single contact at each venue will be established with responsibility for liaising with the Open Museum. The contact will be responsible for keeping to the loan conditions specified for each display and for informing the Open Museum in the event of any theft or damage to objects. Open Museum staff will undertake regular venue inspections’ (Edwards, 1999).

The policy also states that blades, weapons and replica weapons will not be used in community displays.

Over ten years, 20 objects have been damaged: natural history specimens, a rubber object and ceramics.

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 e-mail: laura.mcgugan@cls.glasgow.gov.uk

17. Pembrokeshire Museum Service

Scolton Visitor Centre opened a new gallery in April 1999, ‘Beyond the Green Baize Door: the Victorian servant’, in which visitors can try some of the servants’ daily tasks.

The museum also holds an annual video game week. The museum gallery is filled with video games, consoles and memorabilia from the 1970s, right up to the present day and visitors have the opportunity to play video games on over 20 systems. The exhibition brings in an audience who do not normally visit museums and leads to families interacting together with the displays. The exhibition raises interesting points with regard to collections management and contemporary collecting policies, as the visitors were encouraged to really use the exhibits. The curator argues that the consoles are not the real artefacts, but rather the lines of programming code.

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Pembrokeshire, Wales
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18. The Please Touch Museum, Philadelphia

The Please Touch Museum has been open for 20 years and caters for children aged one to seven, creating an environment where adults and children can learn and explore together.

The museum has travelling trunks (museum exhibits in a box), which contain original games, costumes and artefacts which are loaned out to groups. Trunk themes include: art around the world, with authentic artworks from the Americas, Asia, Africa and Ancient Egypt; 'Franklin's Philadelphia' which introduces the concept of childhood in the 1700s with examples of colonial dress, toys, house models and games; and 'Growing up around the world' which gives the opportunity to explore authentic artefacts, festival costumes, musical instruments, family life and geography. The trunks can be rented for \$50 dollars a week and staff can deliver programmes at the venue for \$300 dollars for a two hour session.

The museum has a collection of over 9,000 toys, rocks, musical instruments and multicultural artefacts. There are a series of interactive galleries: 'Move it' teaches children about various forms of transportation; 'Sendek' is part of a collaboration with the Rosenbach Museum and Library, displaying a collection of original artworks and collection of rare books; 'Alice's Adventure in Wonderland' allows visitors to explore the rabbit hole and then choose to enter the Hall of doors and mirrors, a game of croquet or the Mad Hatter's tea party. The exhibition includes collection of several hundred artefacts including tea sets, holiday ornaments, figurines, puppets and a clock.

Individual visits to the museum are charged at \$8.95. A charge is made for pre-booked group visits of \$5.00 per person for a 75 minute gallery visit which includes a visit to the museums outdoor learning centre, the Science Park, and \$6.95 for an unlimited gallery visit.

All objects, whether in the permanent or educational collections, are assigned into one of three categories: Red (non-handling), Yellow (supervised handling) and Green (unsupervised handling). Criteria for care, loans and documentation vary for each category.

'The Red (non-handling) category contains objects being preserved and protected for future generations. The artefacts are the finest examples in the collection with good provenance or documentation and may be one-of-a-kind, irreplaceable, rare or fragile. These objects are formally accessioned, may be handled only by trained staff and are subject to standard museum care practices, including restrictions on use, loan and exhibit.'

The Yellow (supervised handling) category contained objects which may be carefully touched under strict staff supervision. The objects consist of objects with weaker provenance than those in the red category but may be near duplicates of red category objects; they are objects that can easily withstand careful handling. These objects are formally accessioned and may be handled by visitors under supervision and at the discretion of the staff member responsible for the program in which the object is being used.'

The Green (hands-on) category contains objects without provenance, replaceable contemporary objects, durable objects, reproductions or one of a quantity of duplicates. The objects are formally accessioned primarily to permit inventory control and accountability. These objects may be handled by visitors. Some, especially reproductions and duplicates, are considered expendable in the long term and are part of the educational collection. Their storage is planned for the convenience of the program staff rather than for long-term preservation. However, some objects in the hands-on category, such as large metal sculptures, are part of the permanent collection and are documented accordingly; their handling status may be changed to yellow or red if and when circumstances warrant' (Rowley, 2000).

However, this system although simple and elegant, does require intense staffing to supervise. More recently, collections have been organised along the lines of educational and core collections.

For the Contemporary Toy Collection, two of each item are acquired, one for the permanent collection in the red category, the other for the educational collection in the green category for potential hands-on use.

Children are given an introduction about rudimentary handling techniques and repeat visitors are eager to tell newcomers about the procedures. Objects which are selected for the hands-on programme are considered to be expendable to a certain extent and long term preservation takes second place to educational value.

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19. Reading Museum Service

Reading Museum has had a loan service for 90 years. There are a total of 2,000 collections or boxes, which are loaned out to schools with 1 to 30 items in each box, a total of 20,000 objects. The objects cover a wide range from an Egyptian mummified cat to an art collection of original prints. There are no replicas in the boxes, but there are models of machines such as traction engines. Several thousand objects are loaned out each year. Groups are charged £20 per collection and the objects are delivered and collected from the borrowers.

Some of the most vulnerable objects, such as the mummified cat, are mounted in a Perspex cylinder so that they can be closely observed, but not actually touched. The collection is gradually being transferred to new aluminium suitcases that are filled with Plastazote, which has holes cut into which the objects fit.

As a result of feedback from teachers, panels with interpretative information have been designed which can be displayed with the objects.

The museum also runs a corporate loan scheme. Businesses can borrow objects, which are purpose mounted in a showcase on a plinth, and it is intended that this scheme will be extended for teachers.

The Box Room gallery at Reading museum is divided into three areas. The first is the racking with the loan boxes and the second is where the staff prepare the boxes, both of which are on show to the public behind glass and a low barrier. The third area is the interactive gallery itself, which opened in 1997, with objects, which can be picked up and handled by the children. Computer terminals, where further information can be accessed about the collections, support this. Objects range from a fragment of a Roman Samian bowl to a 17th century Bellamine jug, Victorian glass bottle and 20th Century shoes. Since the gallery has been open, only one object has been damaged: a driving licence, which was covered in graffiti and which it was subsequently decided to withdraw. Some of the objects have niches in which they are replaced after use, whilst others sit on a surface in front of showcases displaying other objects. There is always a member of staff on hand to help with visitors and invigilate the displays. So far no objects have been stolen from the gallery apart from a modern plastic model of a rhinoceros designed to illustrate the animal whose skull is on display.

There is a strong emphasis on the use of original objects rather than replicas and this is a change in philosophy from the first galleries that were refurbished such as the Silchester gallery of Roman life. In this gallery for instance, oversize replica Roman coins can be rubbed to produce a drawing. But it was felt that their size was misleading. The only instance now in which reproductions are used is with costume.

A total of seven new galleries were opened in March 2000 including the Reading: People and Place gallery. This has on open display a wooden timber (treated with wax) dating to 1400 from Reading Abbey; it is secured against the wall in a bracket with Plastazote padding. There is also an early 20th century printing block and 19th century carved wooden sheep's head, which are fixed to a table at which you can sit and closely observe and feel the objects. Seats from the local football stadium, which were intended to be handled, were secured in the horizontal position because of worries over the seats collapsing through use.

In the Window gallery there is a display of sculpture and ceramics on open display, ranging from a mid 20th Century steatite torso to a 17th Century Delftware charger and objects from Reading Abbey, such as a 13th/14th century knight's head and springer dating to 1125, both made from Caen stone. All of the objects are on open display, but some have a Perspex sheet mounted a few centimetres in front of the objects to minimise damage. So far only one object has been damaged, an architectural element from the abbey which was drawn on with crayon, despite being behind the Perspex sheet. There is a presumption that all the objects on open display can be touched, although there is no signage to indicate this and it is intended, in the future, that all objects which can be handled should be marked as such.

In the Green gallery, examples of the local rock types are secured in cages made from Perspex rods so that the objects can be touched, but cannot be picked up and used as missiles.

In the Art Gallery, there is a changing display of paintings and works of art on paper. If the paintings are unglazed they are left like this, so that the detail and texture of the paintings can be observed. Only one object, a miniature, has been protected with a Perspex sheet.

On Thursdays, from 2-7, the museum holds surgeries during which members of the public can view the works of art on paper, which are stored in drawers in the gallery. On this afternoon, objects can also be brought in for identification. On Mondays visitors can come to the stores to view the objects.

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20. Southampton Historic Sites Unit

Southampton has three museum sites: Tudor House Museum, the Museum of Archaeology and the Maritime Museum. Workshops including handling sessions are organised at all three sites and at schools at a cost of £2 per child for Southampton schools and £3.00 for non-Southampton schools. One hour sessions at schools are charged from £1.50 per child.

All museums have hands-on activities for children using original objects. At the archaeology museum rim sherds of Roman pottery can be sorted by fabric and colour. Visitors are invited to make their own mosaic based on an original Roman artefact (in a sand tray) and try on reproduction Roman dress. Also tours are organised, including for visually impaired people, to the stores, so visitors can handle finds.

At Tudor House Museum a selection of six Victorian household objects are mounted in recesses in a wooden board, which are specially cut to shape to accommodate the objects. Visitors can lift and handle the objects, which range from a ceramic hot water bottle to a metal pan. Another area has a selection of objects associated with lighting: a metal brazier and rush light holder.

The Historic Sites Unit has developed two new Discovery Boxes for schools' use or special events. The first is a trunk with objects for handling and structured activities, for use in the Victorian House and Home Exhibition at Tudor House. The second is for use in the Titanic Voices Gallery at the Maritime Museum. The *Titanic Discovery Box* has been devised specifically for use by infant schools or informal family learning opportunities in the museum context, and includes multimedia resources based in the city's Oral History Archive. The same box is available for hire for use in the classroom.

There is a range of loan boxes with items selected from the city's collections, for hire to schools and community groups at £10.00 per week. Each box contains about twelve objects for handling, with accompanying notes for teachers. Themes are wide ranging and include *Victorian People*, *Laundry* and *Saxons*. There are five new Medieval Life themed cases with structured activities for schools using primary artefacts. These range from *Introducing Archaeology* to *People, Clothes and Accessories*. They contain fewer objects securely presented in crystal boxes set in plastizote. The presentation of the cases has been chosen to help meet the needs of the MGEP(DfES) *Medieval Southampton Education Resources Project* for the Historic Sites' Secondary schools audience, and has been directly influenced by the work of Reading Museum Service (see case study 19).

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21. The Tate, London

The Tate organised a touch exhibition of modern sculpture on the theme of the human body in 1976, which contained items from the Tate's collection as well as specially commissioned pieces and a set of tools loaned by Henry Moore. To minimise the damage to objects, washing facilities were improvised at the entrance to the exhibition and visitors were asked to remove rings and other jewellery. When the gallery became too crowded (about 30 to 40 people) it was temporarily closed to all but visually impaired people. 2,000 visually impaired visitors came to the exhibition, which was also open to sighted visitors.

Another tactile exhibition of modern sculpture was held in 1981, but was restricted to visually impaired people. Gauze bandages were provided to slip over fingers where rings could or would not be removed. For this later exhibition two small sculptures, which could be held in the hand, rested on a cushion base, with the remainder being on bases, or directly on the floor. The smaller naturalistic pieces were the most popular, as well as those which had sensuous curves and hollows. 1700 visually impaired people visited the exhibition over nine weeks.

At Tate Modern, handling sessions are led by museum staff for children from KS1 - KS4, as well as for community groups and visually impaired people. Activities focus on interpretative tools for the artworks on display. For instance, Picasso's Weeping Women is investigated and shards of perspex are handled to express the emotion in the picture, and examples of materials and paint surfaces are handled. On average six sessions are held per day.

Special tours are organised for visually impaired visitors and conservators are consulted over which objects are suitable. Gloves are provided for visitors when handling sensitive objects.

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22. Ulster Museum, Belfast

The Ulster Museum has a Discovery Bus that has been visiting primary schools, special schools and community events in greater Belfast area since 1990. Its main purpose is to take handling collections and other educational resources into the wider community to support science in the National Curriculum. The teaching resources include geological specimens, stuffed mammals etc.

14,000 - 16,000 people visit the Science Discovery Bus each year. The majority of the items are specially bought for the bus. 20-25 schools are visited every year. Each child at the school has an opportunity to visit the bus and handle and discover about the objects on display. To further supplement this service there are six bus collections based 'loan boxes', which can be used to extend the experience in a classroom situation by the schoolteachers for the duration of the bus visit (average bus visit about four to five days). The objects on the science bus are positioned on explanation plates so it is obvious if one goes missing. There is a system of labelling which identifies the degree of handling which can be used with an object: a silhouetted hand for geological specimens means they can be picked up; a pointing finger for

stuffed animals means they can be touched, and a hand with an X is used for stuffed birds, which are particularly vulnerable and should not be touched at all. Over a ten year period, five items have been damaged and one scorpion has been stolen. The Science Discovery Bus school visits are free of charge as are the majority of workshops held on the museum site. The lessons taking place in the museum all focus on handling real objects. Original stone tools are handled in the Early Times lesson, a Ushabati figure in the Egyptian lesson and an original cannonball in the Armada lesson. Original costume is used for handling sessions on the Victorians and the Home Front at the museum and reproductions are used, for the popular Viking sessions, because of the rarity of the material. In the in-house science lessons a very wide range of geological and zoological material can be handled from dinosaur eggs to stuffed badgers and bats.

The Early Ireland Gallery which has been opened approximately five years has a tableau of Stone Age material and children can handle the different types of fur and identify the animals in the tableau. There is also a Bronze Age flat axe and polished stone age tools for children to handle. Sherds of different types of pottery can be handled and identified with the objects in the case. Over a 20 year period in the museum three objects have been damaged: a pottery sherd, a flint arrowhead and axe.

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23. Victoria and Albert Museum

At the time of writing, the V&A is currently developing the £31 million HLF funded British Galleries Project with the theme of 400 years of art and design and is due to open in November 2001. Hands-on exhibits are currently being developed around each theme. There will be about 18 handling stations with up to twelve items per station and a further 100 interpretative devices, including a mixture of models, replica and original objects. For instance an original chair will be mounted but will not be touchable, although an accurate reproduction has been commissioned which visitors will be able to reassemble. Original objects include sherds of ceramics, carved woodwork, metals and glass. Some items have been specifically bought for the project whilst others have been drawn from the museum's permanent collections. Commercial tethers (used for computers) will secure original objects so that they can be picked up and closely examined. There will be a clear demarcation between which objects can or cannot be touched. The gallery has a proposed 25 year life and it is anticipated that an extra ¼ million visitors will come specifically to the gallery. At present the V&A has approximately 1million visitors per year. To avoid the frustrating problem of areas being out of order, the units will be designed so that they can be completely removed for repair. The intention is that the hands-on areas will be an integral part of the displays although activities like the chair re-assembly will be separated so that they do not present a hazard.

In the V&A's Chinese and Korean Galleries there are objects on display which can be handled by visitors. The Chinese Gallery contains a Serpentine Carving of a head dated to the Ming period (1600) and a ceramic Ming vase of 1500. Visitors are requested to remove rings from their fingers whilst handling the objects. The Korean Gallery has a ceramic vase from

about 1800. All are reasonably substantial objects, which are fixed to the plinths on which they sit.

In the Silver Gallery a series of silver tablespoons from the 1700s to the present day have been tethered to enable visitors to pick the spoons up and look at them closely and there is also an area where two silver objects (a decorated silver tankard 1714-1715 and a silver plated cake basket of 1785) are displayed in a cage so that visitors can pick the objects up but can not remove them from the cage.

In the 20th Century Gallery two contemporary wooden drawers and three ceramic jugs are tethered and displayed on plastazote to allow visitors to lift and explore the objects thoroughly. The objects were purchased for handling.

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24. Walsall Museum & Library

Walsall Museum offers history workshops at KS1 and KS2 using original Victorian material and replica costume which can be tried on. The museum has a permanent interactive discovery area in which children can handle original objects. Wall mounted boxes with perspex fronts have holes so that objects can be touched. Other objects are secured to shelves so that the objects can be handled. Objects include variety of metal and plastic kettles from the Victorian period to the present day and a ceramic bed warmer.

The museum has arranged a number of temporary exhibitions with hands-on elements. 'Start', on the topic of art, was targeted at three to five year olds. 'Me and You' was aimed at pre-school children and explored themes using objects from the Museum & Art Gallery's social history and art collections. Concern over the rate at which the protective coating was worn away on a number of bronzes led to the use of perspex cases.

There are plans to develop the Walsall Museum & Library 'Vision' which began in August 2001 with the installation of a lift and redevelopment work to the ground floor. Phase II contains plans to create a more interactive Costume gallery and the 'Amongst the Books' project which aims to display objects on the library bookshelves, making links to printed material creating an element of surprise and encouraging visits to the Museum.

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25. Woodhorn Colliery Museum, Northumberland

At Woodhorn Colliery Museum objects selected for loan boxes are usually duplicates or incomplete. The mining box contains examples of mining lamps from the late 19th century up

to the present day. Unique items are not used, nor would banners, commemorative glasses or paintings be used because of their fragility. The service is being developed and approximately 20 loans go out per year. Handling sessions have recently been introduced at the museum and no charge is made for the service.

The museum is willing to loan objects from the main collections for groups to handle, though prefers them to borrow a loan box

There are working items of machinery on display on which annual maintenance checks are made. Risk assessments are carried out on all objects used with the public and guidelines are developed for safe use.

Contact: Victoria Coxon, Assistant Museums Officer, Woodhorn Colliery Museum, QEII Country Park, Ashington, Northumberland NE63 9YF
Telephone: 01670 856968

26. York Archaeological Trust

At the Archaeological Resource Centre (ARC), operated by York Archaeological Trust, handling sessions are offered to schools, adult education classes and museum staff. Objects dating from the Roman and Viking period are used to interpret the National Curriculum subject Invaders and Settlers. On average 20-30 sessions are organised per year. No charge is made for the service, but organisations who can afford it are asked to make a contribution which can be up to a £100 for a lecture.

Cotton gloves are provided for handling the objects and people are asked to handle objects carefully because they are unique. Finds and conservation staff regularly check objects. Vulnerable metals are not handled but presented in Perspex boxes filled with Plastazote.

The hands-on exhibits in the museum were developed for children in year six studying the Vikings and a combination of objects, replicas and modern materials are used.

Objects are not secured in any way as it is felt that this will encourage theft, but it is emphasised that the material is unique and important. Knowledgeable volunteer staff are available at all times to help visitors. It is felt that, inevitably, some damage will occur when objects are on open display but skilled conservators can usually repair this. Objects are checked daily and damage is reported to finds and conservation staff who keep records of the checks made. A piece of antler comb was broken, which was repaired and is still being used. A leather shoe sole was torn after five years (250,000 visitors).

Bones have developed polished surfaces through handling and pieces of pottery, bone and shell have become rounded.

Reproductions are used when originals are not available and for vulnerable categories of objects. In principle, any object could be used for handling for maximum public benefit, although human remains are obviously a sensitive area.

Risk assessments are undertaken of activities with objects and there is always sufficient staff on hand to monitor objects and assist visitors.

Contact: Andrew Jones, Head of Education, York Archaeological Trust, 13 Ogleforth, York
YO1 7FG
Telephone: 01904 663007
e-mail: bone@yorkarchaeology.co.uk

Case Studies: Summary Table 1

	Archives	Rotation of objects for handling	Cages/ boxes for handling objects in exhibition galleries	Use of volunteers	Multi-disciplinary Exhibition/ Project teams	Perspex sandwiches/ cylinders for protection	Collaborative projects to pool resources
Westminster City Archive	√	√					
British Museum			√	√	√		
Canadian Children's Museum							
Chertsey			√				
Down County							
Education Museum, South Africa	√	√		√	√		√
Egypt Centre			√	√	√		
Goole		√	√	√	√		
Grange Museum						√	
Milestones (HCCMS)					√		
Search (HCCMS)					√		
Hertford							
NELMG							√
Hackney (NELMG)						√	
Islington (NELMG)				√			
NMGM						√	
Norfolk Museums and Archaeology Service					√		
Open Museum							
Pembrokeshire							
Please Touch, Philadelphia							

	Archives	Rotation of objects for handling	Cages/ boxes for handling objects in exhibition galleries	Use of volunteers	Multi-disciplinary Exhibition/ Project teams	Perspex sandwiches/ cylinders for protection	Collaborative projects to pool resources
Reading			√		√	√	
Southampton							√
Tate							
Ulster	√		√				
V&A	√	√	√		√	√	
Walsall			√				
Woodhorn Colliery					√		
York Archaeological Trust						√	

Case Studies: Summary Table 2

	Funding of sessions through school charges	Increased visits	Replica costume	Loan boxes	Hands-on exhibits in galleries	Direct teaching sessions	Outreach bus
Westminster City Archive					√	√	
British Museum				√		√	
Canadian Children's Museum						√	
Chertsey					√		
Down County			√	√	√	√	
Education Museum, South Africa	√	√	√		√		
Egypt Centre	√	√	√	√	√	√	
Goole		√			√	√	

	Funding of sessions through school charges	Increased visits	Replica costume	Loan boxes	Hands-on exhibits in galleries	Direct teaching sessions	Outreach bus
Grange Museum							
Milestones (HCCMS)				√	√	√	
Search (HCCMS)			√		√	√	
Hertford		√			√	√	
NELMG						√	
Hackney (NELMG)			√	√		√	
Islington (NELMG)	√	√	√			√	
NMGM						√	
Norfolk Museums and Archaeology Service		√			√		
Open Museum					√	√	
Pembrokeshire				√	√		
Please Touch, Philadelphia					√		
Reading		√	√	√	√	√	
Southampton	√		√	√	√	√	
Tate				√	√	√	
Ulster						√	
V&A			√		√	√	√
Walsall					√	√	
Woodhorn Colliery				√			
York Archaeological Trust						√	

Useful contacts

GEM Freelance Network

The Group for Education in Museums Freelance Network can be used to contact museum educators.

Contact: Robin Clutterbuck, The Castle, Seymour Road, Newton Abbot, Devon TQ12 2PU

Tel: 01626 333144

E-mail: freelancenetwork@gem.org.uk

Further details can be found on the GEM website at <http://www.gem.org.uk/flnet2k1b.html>

UKIC

Contact the UKIC for details of conservators on the Conservation Register.

Contact: United Kingdom Institute for Conservation, 109 The Chandlery, 50 Westminster Bridge Road, London SE1 7QY, UK

Tel: 020 7721 8721; Fax: 020 7721 8722

E-mail: ukic@ukic.org.uk

The Conservation Register website can be found at <http://www.conservationregister.com/>

Asbestos removal

Details of an individual company are included below, as it can be difficult to find asbestos removal specialists.

Contact: Progressive Asbestos Removal Ltd, 6-10 Tring Close, Newbury Park, Ilford, Essex IG2 7LJ

Tel: 020 8518 6050

Other suppliers

See *Ours for Keeps?* (MGC, 1997b.).

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