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| **Lesson Seven: Silver Working** | |
| This lesson is all about money. We have moved on to the Viking and Medieval periods. Money is instantly relatable for students as their lives are often dominated by it. However, it can be quite difficult to imagine a time before money. The lesson aims to introduce different forms of currency such as Viking ring money, silver bracelets worn on the arm and traded for goods or services by weight. | |
| **Curriculum Links - Social Subjects (People, Past Events and Societies)** | |
| Experiences and Outcomes | Benchmarks |
| I can evaluate conflicting sources of evidence to sustain a line of argument. SOC 4-01a  I can present supported conclusions about the social, political and economic impacts of a technological change in the past. SOC 4-05a  I can evaluate the changes which have taken place in an industry in Scotland’s past and can debate their impact. SOC 4-05b | * Demonstrates the ability to provide a valid argument on a historical theme. * Provides at least two valid opinions to support  the argument. * Identifies the impact of a technological change with at least one of each: social, political and economic impacts and gives a reason for the conclusion. * Suggests at least three changes which have taken  place in Scotland’s industry. * Provides at least two positive and negative impacts of one of these changes. |
| **Wider Curricular links** | |
| **Expressive Arts (Art & Design):**  I have continued to experiment with a range of media and technologies, handling them with control and assurance to create images and objects. I can apply my understanding of the properties of media and of techniques to specific tasks. **EXA 4-02a**  I can use the visual elements and concepts with sensitivity to express qualities and relationships and convey information, thoughts and feelings. I can use my skills and creativity to generate original ideas in my expressive and design work. **EXA 4-03a**  Through creating a range of reference material, I can demonstrate my skills of observing and recording and apply them to work in other areas of the curriculum. **EXA 4-04a**  **Technologies (Technological Developments; Past, Present and Future):**  I can analyse products taking into consideration sustainability, scientific and technological developments. **TCH 4-05a**  **Technologies (Exploring Uses of Materials):**  I consider the material performance as well as sustainability of materials and apply these to real world tasks. **TCH 4-10a** | |

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| **Learning Objectives** |
| To describe in detail the method of casting silver coins. |
| **Resources and Suggested Reading** |
| **Required Resources - Supplied in the boxes or from ARCH website** |
| Objects: Viking ring money and Arabic coins, Medieval coin die and coins (Box 3)  Information Sheets: Viking Ring Money and Arabic Coins object sheet, Medieval Coin Die and Coins object sheet, CT Creating Coins and Seals ; Additional Images: Viking Silver Hoard from Storr Rock, Skye  Other Resources: ARCH Silver Working Workshop video ([link](http://www.archhighland.org.uk/experimental-archaeology.asp)); ARCH Medieval Coinage Workshop video ([link](http://www.archhighland.org.uk/experimental-archaeology.asp)), Balance scales |
| **Additional Required Resources** |
| Modern coins |
| **Essential Reading - Information sheets supplied in the box or from ARCH website** |
| Viking Ring Money and Arabic Coins object sheet; Medieval Coin Die and Coins object sheets |
| **Suggested Additional Reading - Information sheets supplied in the box or from ARCH website** |
| When? Vikings and Norse and When? Medieval information sheets |

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| **Introduction** | | **5 minutes** |
| **Modern Coins** (5 minutes) | Resources: Modern coins | |
| * The lesson begins with a look at modern coins and their features. It is interesting how many students won’t have looked closely at a coin. | | |
| Hand out a range of modern coins to the students. Ask them ***What features do you notice about the coins?*** Discuss their responses as a class.  Arrange the class into pairs and have them compare their coins. Do they share common features? Are there any differences?  The features it is important to highlight are:   * Image of the monarch * Value of the coin * Place the coin was minted * Year the coin was minted * (Mostly) Patterned designs   Explain to the class that today you are going to look at silver working, and specifically for making silver objects used as currency. However, not all “money” took the form of coins. | | |

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| **Main** | | | | **45 minutes (excluding optional task)** |
| **Money as Jewellery** (10 minutes) | Resources:  Objects: Viking ring money and Arabic coins (Box 3)  Information Sheets: Viking Ring Money and Arabic Coins object sheet; Additional Image: Viking Silver Hoard from Storr Rock, Skye | | | |
| * The concept of money is so familiar it can take a little while for students to relate to value being ascribed to anything other than coins. * This task simply introduces the idea of a different form of currency. | | | | |
| Show the class the replica Viking ring money. Ask the class ***What is this?*** While it is a bracelet it was also used as money.  Hand the students the object information sheet about Viking ring money and Arabic coins.  One student of the pair is to read the first paragraph and the other student is to read the second paragraph. They are then to summarise what they read to their partner.  Display these questions on the board:   1. **What is the ring money replica made from?** (Pewter) 2. **What would they have been made from in the past?** (Silver) 3. **Why is the silver turned into a form of Jewellery?** (to keep their wealth close or to show it off like jewellery) 4. **How was ring money made?** (Beaten into shape from a silver ingot) 5. **Why were the ends flattened?** (To make it more comfortable to wear) 6. **What is the final stage of making silver ring money?** (Hammer it into a curved shape so it can be worn around the wrist)   Explain that Vikings used any kind of silver (even silver coins) as money, but instead of the coins being worth something inherently, the weight determined the worth of each object. An example of a Viking silver hoard is shown in Additional Image: Viking Silver Hoard from Storr Rock, Skye. | | | | |
| **Silver Working Video** (15 minutes) | | | Resources: ARCH Silver Working Workshop video ([link](http://www.archhighland.org.uk/experimental-archaeology.asp)) | |
| * The silver working workshop was fascinating as Jim Glazzard created a piece of Viking ring money from a silver ingot. * The most interesting part of the workshop was learning how much knowledge has been lost. This subject is covered briefly in the tasks below. | | | | |
| Show the students the video detailing how Viking ring money is made. It isn’t a long video (only ten minutes long) and worth showing in its entirety. However, the time stamps are included below if you want to stop the video to discuss it, or skip to certain sections.  The demonstrator is Jim Glazzard from Asgard Crafts.  Timestamps:  **0:00** - Explanation of the hearth and the bellows he is using.  **2:10** - Explaining silver ingots.  **2:55** - Explaining silver in the Viking economy and the use of scales.  **4:08** - Beginning the process of turning silver ingots into ring money.  **5:32** - Annealing the silver.  **6:18** - Continuing to hammer out the silver.  **6:42** - Heating the silver again and quenching it in vinegar.  **7:46** - Continuing to hammer out and decorate the bracelet using stamps.  **8:25** - Shaping the bracelet.  **8:53** - A volunteer trying punch decoration.  **9:22** - Final shaping of the bracelet.  After the video recap the part from **5:32** until **6:18** where he is trying to anneal the silver. Explain to the class that on the day Jim was unable to anneal the silver properly. It is lost knowledge. However, following the workshop Susan Kruse - the Learning and Engagement Manager for ARCH - added the following update “Jim was so taken by the problem of annealing silver that he completed further research, and a master’s degree, on the subject and he now thinks he knows how Viking craftsmen managed it. This shows the value of experimental archaeology sessions.”  Jim would use a blow torch today to heat the metal to the correct temperature to soften it. However, when trying to recreate the process on the day he was unable to, hence the “rough” - in his own words - final design.  Finally, as a *think-pair-share* task, ask the class ***What would happen if people in the future looking at how we lived now, didn’t understand how computers work? What would they not be able to access and so wouldn’t know about us?***The answers will be very varied but the following will all be inaccessible: the internet, social media, pictures, words documents etc. Without this information people in the future wouldn’t know how we entertained ourselves, how we communicated, how we learnt new things… and so on. | | | | |
| **Trade Through Weight** (10 minutes) | | Resources:  Object: Viking ring money and Arabic coins (Box 3)  Information Sheets: Viking ring money and Arabic coins object sheet  Other Resources: Balance scales | | |
| * Expanding on the idea of different forms of currency, the students will use balance scales to explore trading through weight. | | | | |
| Hand out the Viking Ring Money object information sheet and have the students read it. Give them the opportunity to ask any questions relating to the information they have just read.  Show the class the Viking ring money bracelet. Explain that it is a pewter replica rather than silver. Using a set of balance scales demonstrate trading for objects (possibly using one from the box), by weighing the Viking ring money against a known weight. The value of the ring money was directly related to its silver content. Therefore people would trade items or services against a weight of silver. (*OPTIONAL: you can also use the Arabic coins from Box 3 to demonstrate how Vikings would add smaller pieces of silver to make the scales balance against a known weight when trading*). Through this process Vikings were able to trade all over their vast empire.  Ask the students to create a table with the two headings “benefits” and “problems”. Under those two headings the students are to think of all the potential benefits and problems with using silver ring money as a currency. You could then have the students compare their work as a pair and share their answers. Further research could be conducted if ICT is available.  Some examples of possible answers are: ring money allows personal wealth to be kept close and safe, money as jewellery allows you to show your wealth and other silver objects or scraps (hacksilver) could be mixed with the bracelets to reach the desired weight. On the other side, no one guarantees the purity of the silver, and problems could arise from different weight systems being used in various places. | | | | |
| **Medieval Coins** (10 minutes) | | Resources:  Objects: Replica Medieval and Arabic coins; coin dies (Box 3)  Information Sheets: Medieval Coin Die and Coins object sheet, CT Creating Coins and Seals  Other Resources: modern coins | | |
| * This activity now moves onto coins and their place in Medieval society. * It tasks the students with comparing and contrasting Medieval and modern coins. | | | | |
| Arrange the class in groups of three or four and share the Medieval coins from Box 3.  Explain that these are pewter replicas but would have been made from silver in the past. The coins themselves are pennies; despite the same name they are very different from modern pennies. Point out that these are replicas of medieval coins minted in Inverness during the reign of Alexander III (1249 - 1286), the first monarch to produce coins in the Highlands.  Next share the Arabic coins with the class (there may not be enough for one per group so these will need to be passed between the students). Ask ***What common features can you find on the Arabic coins and the medieval Scottish coins?*** They still have imagery and script, but it is very different from the Scottish coins.  Hand out the modern coins so the groups can compare. Ask the groups to find the similarities and differences between the coins.  The main thing to notice is that some of the features of coins discussed in the introduction are common to coins from the past as well.  Ask the class to read the Medieval coins object sheet and CT Creating Coins and Seals. Display the two following questions on the board: ***How were the coins made? What were the problems with the coins?***  Select some students to answer the above questions when the information has been read. | | | | |
| **Coin Making Video (OPTIONAL)** (10 minutes) | | Resources: ARCH Medieval Coinage Workshop video ([link](http://www.archhighland.org.uk/experimental-archaeology.asp)) | | |
| * The video in this part of the lesson discusses a few different elements of the coin making process. | | | | |
| If you want to show more about the process of making coins, there is another ARCH video detailing the whole process from beginning to end. The below discussion points are based on that video.  Start the video at **0:24** - the demonstrator, Stuart Strong, is explaining the process of making silver pennies, a common coin in the medieval period.  From **4:16** is a discussion about how the dies were produced for minting coins including a discussion about how they are made today.  From **6:03 to the end of the video** is a discussion about when and how minting began in Scotland. Just as a note, the reign of *Henry I* began in 1100 AD and ended in 1135 AD and *Alexander III* ruled Scotland from 1249 AD until 1286 AD to give some contexts to the time period he is discussing. | | | | |
| **Plenary** | | | | **5 minutes** |
| **Three Facts** (5 minutes) | Resources: None | | | |
| * Finally the class are asked to reflect on what they have learnt about currency in the past. | | | | |
| Finish by asking the students to share with a partner three facts that they recall from the lesson.  Collate the answers as a class. | | | | |

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| **Total Lesson Time: 55 minutes** |
| **Links and Further Information** |
| ARCH Experimental Archaeology Project:  [http://www.archhighland.org.uk/experimental-archaeology.asp](http://www.archhighland.org.uk/experimental-archaeology.asp%20)   The two videos relating to silver working and making medieval coins can be linked from this site. The blogs for both workshop sessions also have a number of resources.  **Viking ring money**  Most books on the Vikings mention their metalworking skills. There are a range of good introductory books about the Vikings in Scotland, including for adults Graham-Campbell, James and Batey, Colleen 2003. *Vikings in Scotland*. There are also a number of children’s books in the local libraries. Arwidsson, Greta and Berg, Gosta 2000. *The Mästermyr Find: A Viking Age Tool Chest from Gotland*. Publication of a well preserved Viking Age tool set – a wonderful find and essential for experimental archaeology! A copy is in Dingwall Library. Hawthorne, J. G. and C. S. Smith 1963, reprinted 1979. *Theophilus: On Divers Arts*. Recommended by Jim Glazzard for insights into what an early 12th medieval European craftsmen knew about metalworking.  **Images Online**  Ring money from Tarbat (Easter Ross) and Kirk o’Banks (Caithness) hoards are on ScRAN www. scran.ac.uk  Dornoch ring money fragment <http://www.archhighland.org.uk/news.asp?newsid=78>  NMS website <http://nms.scran.ac.uk/search/> and search for ring money  **Videos**  Hand Crafting Viking Jewellery: Making an Arm Ring from Birka (3:47) <https://www.youtube.com/watch?v=ilrNIyi2x9c> Jim Glazzard making an arming Hand Crafting Viking Jewellery: The Twisted Silver Neck Ring (3:36)<https://www.youtube.com/watch?v=8l4RwurN7zI> Jim Glazzard making a twisted neckringHand Crafting Viking Jewellery : The Huxley Hoard (3:11) [www.youtube.com/watch?v=v\_jSJvecn60&t=17s](http://www.youtube.com/watch?v=v_jSJvecn60&t=17s) Jim Glazzard making replicas from the Huxley Hoard  The silversmith at Foteviken (7:43)  <https://www.youtube.com/watch?v=M3uV9_ceaZs>  Silversmith working in the Viking Reserve at the Museum of Foteviken in Sweden  **Medieval coins**  **Books** (available in Inverness Library):  Bateson, Donald 1987. *Scottish coins*.  Bateson, Donald 1991. *Coinage in Scotland*.  Holmes, Nicholas 1998. [*Scottish coins: a history of small change in Scotland*](https://hlh.spydus.co.uk/cgi-bin/spydus.exe/ENQ/OPAC/BIBENQ/80841724?TIH_TYPE=B&TIH_NS=1&TIH=SCOTTISH%20COINS%20A%20HISTORY%20OF%20SMALL%20CHANGE%20IN%20SCOTLAND)  Medieval coins found in Scotland:  J.D. Bateson and N.M. McQ. Holmes have periodically published surveys in *Proceedings of the Society of Antiquaries of Scotland* which is available [online](file:///D:\Documents\ARCH\ARCH\Lesson%20Plans\Completed%20Lessons\Fourth\archaeologydataservice.ac.uk\archives\view\psas\volumes.cfm) at archaeologydataservice.ac.uk/archives/view/psas/volumes.cfm  ‘Roman and Medieval Coins found in Scotland 2016-10’ – v. 143 (2013), 227-263  ‘Roman and Medieval Coins found in Scotland, 2001-2005’ – v. 136 (2006), 161-98  ‘Roman and Medieval Coins found in Scotland, 1996-2000’ – v. 133 (2003), 245-76  ‘Roman and Medieval Coins frond in Scotland, 1988-95’ – v. 127 (1997), 527-61  **Images online**  There are a number of images on-line, particularly from retailers selling coins. The Portable Antiquities Scheme in England also has a number of Scottish coins illustrated.  <https://finds.org.uk/medievalcoins/categories/category/id/26>  SCRAN ([www.scran.ac.uk](http://www.scran.ac.uk)) also illustrates a number of Scottish coins.  **Videos**  Hammered Coin manufacture (5:35)  <https://www.youtube.com/watch?v=nrT8MbG7uTg>  Dave Greenhalgh is featured here with Barrie Cook, curator of Medieval coins from the British Museum, making and discussing hammered coins.  Shaking Hands with the Past (3:48)  <https://www.youtube.com/watch?v=TLhx2ul2BEM>  Jorvik Group video showing how Viking coins were made  **Websites**  [Scottish coinage](https://en.wikipedia.org/wiki/Scottish_coinage) – overview on Wikipedia  <https://en.wikipedia.org/wiki/Scottish_coinage>  Mints of Scotland – overview on Wikipedia with chart of Scottish kings and where they minted coins  <http://en.wikipedia.org/wiki/Mints_of_Scotland>  Making coins in the Middle Ages  <http://www.royalmintmuseum.org.uk/history/making-money/making-money-in-the-past/the-middle-ages/index.html> |

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