Ten tips for learning success:

In this module you will…

1) Get in touch with information about the Metal Ages, including; metallurgical processes, types of metals, beaker pots, dolmens and irrigation.

2) View and reflect on images and videos of objects and structures from the Metal Ages.

3) See modern day representations of the Metal Ages casting process of bronze implements in order to help you relate to the difficulty of it.

4) Introspect on what the influence of metal development must have had on people’s lives and have a debate about it.

5) Imagine what the surroundings were like thousands of years ago so you can more easily identify with ancient civilizations.

6) Produce a “mind map” exploring the topic of irrigation and compare it with your classmates’ mind maps to help you expand your thought process.

7) Project into the past and suppose just how people from the Metal Ages discovered and developed these “new” metals and express your ideas orally.

8) Analyze the structures of dolmens and the use of beaker pots.

9) Plan, design and build a replica of a dolmen in a group with delegated responsibilities throughout the process.

10) Assess and evaluate your progress, participation, recalling, understanding of information about the Metal Ages, your interaction with your classmates and the stages you passed through to complete the dolmen project.
1. READING

The Metal Ages

The great advance in metallurgy occurred with the invention of bronze. It was used to produce very hard, resistant objects (swords and knives).

The Metal Ages began about 6,000 years ago.

During the Metal Ages people started using metals, like copper, tin, bronze and iron, to make tools and weapons.

They heated and shaped the metals in hot furnaces.

People often used precious metals, like gold and silver, to make jewellery.

With all these changes, people’s lives became easier. Villages and towns also became bigger and more prosperous. In time, people started building the first cities.

The Metal Age is divided into three stages: the Copper Age, the Bronze Age and the Iron Age.

Pottery, irrigation and dolmens in the Metal Ages

During the Metal Ages, people made a variety of metal objects. They also invented new techniques for making clay pottery. The most characteristic examples are beaker pots. They look like upside-down bells.

Some parts of the Iberian Peninsula became very prosperous during the Metal Ages, such as the area around El Argar, in the southeast. Argaric towns had strong walls for protection and there were also canals to irrigate farmers’ crops.

During the Metal Ages, people started using large blocks of stone called megaliths to build monuments. The most important megalithic monuments from this period are called dolmens.
Activities: Questions

A. Recalling

“In your own words” – Pinterest images of objects from the Metal Ages

DIRECTIONS: Click on the links below. Look at the photos and images found at pinterest.com. Choose the piece that you find the most “interesting” and think about it.

What is it? What was it used for? How do you think it was made? Who owned it after it was made? How did it survive until today?

Read the information below the image and remember the ideas that are expressed there.

On your teacher’s mark, you will share your opinion and the information about the image you have chosen with 3 to 5 different people. Explain:

- Which image did you choose? (Describe it.)
- Why did you choose it? (Make a connection with it.)
- What information was included? (Remember the idea of it.)

http://www.pinterest.com/jsilcott/the-iron-bronze-copper-age-history-timeline/
http://www.pinterest.com/senua/iron-age-weapons/
Multiple Choice:

DIRECTIONS: Choose the letter of the best answer to complete the following sentences.

1) The metal ages are important because a great advance in metallurgy occurred. During the Metal Ages people started using metals like_____________.
   a) copper, tin, bronze and aluminum steel
   b) copper, tin, bronze and iron
   c) copper, plastic, tin and furnaces
   d) copper, tin, paper and iron

2) The Copper Age, the Bronze Age and the Iron Age are_____________.
   a) the three stages of the Metal Age.
   b) the three types of metal people used to cook their food in the Middle Ages.
   c) the three types of metal that you can use to make tin.
   d) the three important ages that happened 60,000 years ago.

3) Which of the following was not invented or used in the Metal Ages:
   a) techniques for making clay pottery.
   b) techniques for making beaker pots that look like upside-down bells.
   c) canals to irrigate farmers’ crops.
   d) megalithic monuments called beaker pots.

4) Dolmens are the most important megalithic monuments in Spain. They are made of_____________.
   a) blocks of metal
   b) blocks of stone
   c) blocks of bronze
   d) blocks of beakers
B. Understanding (process and talk to someone)

Watch one or both of the following videos. What bronze implement are they making in the video? Try and remember the different stages in the process.

Notice the materials, tools and implements that are used to forge the implements.

“Sand casting of a Bronze Age sword”
http://www.youtube.com/watch?v=lbzSa68T-Ws

“Bronze casting demonstration”
http://www.youtube.com/watch?v=Ut3pXPyMze4

GROUP DISCUSSION

Directions: In groups of 2, 3 or 4 discuss the following points. Take notes during the discussion and remember the 3 best ideas from your group conversation.

“With all these changes, people’s lives became easier. Villages and towns also became bigger and more prosperous. In time, people started building the first cities.”

- Why did the invention of bronze and iron make people’s lives easier? Use specific examples.
- Why did the development of metal use influence the size and wealth of villages and towns? Be specific.
- People used gold and silver to make jewellery. Why did they use gold and silver to make jewellery and not another type of metal?

DEBATE: “Your group’s ideas are the best!”

You will represent your group and defend your group’s 3 best ideas. Your teacher will divide you into groups of 2, 3 or 4 with members from other groups. When it is your turn to speak, you must try and defend the ideas you and your group talked about against the ideas of the other members in the debate.

Your goal is not to have the best ideas in the debate. Your goal is to defend your ideas the best.

Support your arguments with specific information you discussed with your original group.
Dolmens, water and irrigation in the Metal Ages

Look the images and videos of a rare dolmen found in Russia. Click on the following link:

http://www.tripadvisor.com/LocationPhotos-g2641577-Lazarevskoye_District_Greater_Sochi_Krasnodar_Krai_Southern_District.html

INDIVIDUAL REFLECTION

DIRECTIONS: Think about the images and video you saw of the Volkonsky dolmen in the Lazarevskoye District and the nature around it. Think about your answers to the following questions:

- How did the scenery make you feel while you watched the video and looked at the pictures?
- Did you imagine yourself being there thousands of years ago?
- How do you think the area looked when the dolmen was first built? Do you think it was more or less the same or different?

MIND MAP

“El Argar, Argaric towns had strong walls for protection and there were also canals to irrigate farmers’ crops.”

Make a mind map of water and irrigation in the Metal Ages. Start by writing “Water is life.” as the central topic.

“Mind map exhibit”

DIRECTIONS: When you finish your mind map, you will place it on your desk or table to be seen by other students. You will also look at other students’ mind maps.

Extension: After everyone has seen all the mind maps, return to your own mind map. Take a few moments and add several new ideas to your own mind map based on what you remember from your classmates’ productions.

FYI! (For Your Information)
Great mind mapping software can be found here for free!

http://www.xmind.net/

http://cooggle.it/

http://freemind.sourceforge.net/wiki/index.php/Main_Page
**“Investigate a dolmen on the Internet”**

**DIRECTIONS:** Surf the net and find a dolmen close to your town. Find the answers to the following questions about the dolmen you choose. Take notes and remember the ideas you find. You will need this information later:

<table>
<thead>
<tr>
<th><strong>Location:</strong></th>
<th>Where is it? Why do you think the builders chose that specific place to build it?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance and logistics:</strong></td>
<td>Investigate its environment, where it was built and its and the surroundings. Describe it.</td>
</tr>
<tr>
<td><strong>Raison d'être:</strong></td>
<td>What do you think it was built for? Who do you think used it? How often do you think they used it?</td>
</tr>
<tr>
<td><strong>Visit:</strong></td>
<td>If you wanted to go there, how would you do it? What means of transport would you take? Is it close to any village, or isolated? Would you need any special means of transport to get there, like an ATV (all-terrain vehicle) or a 4X4?</td>
</tr>
<tr>
<td><strong>Gather information:</strong></td>
<td>Collect photos, articles, videos, images, etc. of the dolmen you choose and classify the information. <em>(Classify the information example: “Interior”, “Surroundings”, “Transport”, “Materials”, etc...)</em></td>
</tr>
</tbody>
</table>
Choose one or two of the following activities to do. Activities 2 through 5 may be based on your previous investigation of a dolmen:

1 - “New” metals

Have a brainstorming session on paper or make a mind map that focuses on the following concepts:

“The Metal Age was a time of important technological advancement in human history. Very hard, resistant objects like new tools, swords and knives could be produced because of the invention of bronze.”

- How do you think people “discovered” these new metals?
- How did humans develop the ability to find and make things from these metals? Where did they get the metal from?
- In your opinion, what was the day-to-day family life like before the use of metal?
- How did metal change the lifestyle of humans?

ORAL PRESENTATION

DIRECTIONS: Prepare a 1 to 2 minute presentation based on your reaction to the questions above. Make an audio recording of your presentation or present it to a group of peers. You may use your notes for the presentation.
2 – Plan a trip to a dolmen

Plan a trip to a dolmen close to your town. Think of all the necessary aspects to have a successful trip (you will need to research this on the internet):

a. How far is it?

b. What means of transport would you take?

c. Think of the area: is it difficult to access?

d. Calculate the expenses it would take.

e. Write down the plan and share it with your classmates:

i. When?: date, time and duration of the visit

ii. How will you get there?

iii. How much will the trip cost?

iv. What will you need to take? (Lunch, water, comfortable shoes, camera, mobile phone, notebook, pencil, etc...)

f. What activities will you do while there? (Sightseeing, meditation, rain dance, hide and seek, etc...)

g. Communicate the plan in a presentation to another group or to the class.

3 – Create a “glog” to present a dolmen

Visit www.glogster.com and sign up for a free account.

Create a “glog” with information from the dolmen you have researched and collected information on.

Share the glog on the dolmen with other groups or the entire class.

4 – Create a powerpoint presentation on a dolmen

Create a power point presentation on the dolmen you have researched and collected information on. Prepare a five minute oral presentation with your group or individually.

5 – Create a podcast “from the Metal Ages”

Record a podcast with http://www.fotobabble.com or any recording technology. Imagine you are an inhabitant of the Metal Ages. Describe your dolmen and what you use it for. Give specific details.
Look at the images from the Metal Ages above.

What are the characteristics that make these images scenes from the Metal Ages?

1. This is a realistic image from the Metal Ages because:
   a) The person is using a sword and swords were made in the Bronze Age.
   b) The people are going to go swimming and swimming was invented in Swimming Age.
   c) The two people are drinking water from beaker pots.

2. What system did the farmer probably use in order to irrigate his field? (Hint: it is a process that is used to control water that is still used today.)

   answer: c __ __ __ l

3. What are the characteristics of this structure that make it a typical construction from the Metal Ages?
EXTENSION

Megalithic monuments

Bell-shaped beaker pot.

Watch the following video showing a detailed look at some dolmens:

http://www.youtube.com/results?search_query=dolmens&page=&utm_source=opensearch

In your opinion, what did the people of the Metal Ages use dolmens for?
Think of 3 possibilities:

1) 
2) 
3) 

In your opinion, what did the people of the Metal Ages use beaker pots for?
Think of 3 possibilities:

1) 
2) 
3) 

Create your own bronze piece in the activity found here:

http://etcweb.princeton.edu/asianart/interactives/bronze/bronze.html#
COLLABORATIVE TASK: Plan and Build a Dolmen Project in a Group

INSTRUCTIONS:

You will be in groups of 2, 3 or 4 to plan and build a replica of a real dolmen.

You will need the information you and the other members of your group collected from your investigation in the “Applying and Reflecting” section.

Use the information you gathered: photos, articles, videos, and/or images to discuss the qualities of each member’s dolmen as a group.

Decide together which dolmen the group would like to use as a model to try and reproduce in this project.

Plan out the design of a dolmen and its surrounding area on paper before building the craft.

Be sure and think of the following to ensure a quality project:

- What steps will you need to take to build the dolmen? (Be specific.)
- Designate responsibilities for design and for construction. (Be specific.)
- How firm does the foundation need to be? / How can you make a firm foundation for the dolmen?
- What kinds of rocks, twigs, sticks, grass, brush, lichen, etc. will need to be used to best recreate the dolmen you have chosen? (If possible, try and collect actual flora from the area where the dolmen stands. This will add a more realistic dimension to your replica.)
- What type of rocks will you use for the interior of the dolmen? ... for the exterior?
- How will you use the glue/superglue/”bluetack”/Plasticine to ensure a well-connected, sturdy structure?
- How will you ensure proper adhesion of the twigs, sticks and/or grass for the surrounding foliage decoration?
Be sure and do the following:

- Take photos, videos and/or recordings of the entire process of the project from the groups first meeting to the planning, collecting and constructing of the dolmen.

- Compare the final version of your dolmen to the original. Make any modifications necessary in order to achieve maximum realism.

- Show your creation to other groups.

- Share the steps and procedures you and your group implemented in order to make your dolmen replica.

- Give positive feedback to others on their dolmens.

- Add the bibliography and references you used for your project:
  
  o Add the websites you surfed to get information
  o Add photos/recordings of the creation process (like a “making of...” presentation)
  o Anything else special you needed or used

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<table>
<thead>
<tr>
<th>You need:</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- long, flat rocks</td>
<td>1-line the container (box top, tupperware or wicker basket) with a layer of plastic</td>
</tr>
<tr>
<td>-twigs, sticks, leaves, brush and/or grass</td>
<td>2-fill the container with dirt</td>
</tr>
<tr>
<td>-dirt</td>
<td>3-construct the dolmen of your design and the surrounding foliage</td>
</tr>
<tr>
<td>-a box top, a shoebox, flat tupperware or a wicker basket</td>
<td></td>
</tr>
<tr>
<td>-a plastic bag</td>
<td></td>
</tr>
<tr>
<td>-glue/superglue/&quot;bluetack&quot;/Plasticine</td>
<td></td>
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</tbody>
</table>
### Assessment Rubric

<table>
<thead>
<tr>
<th>The Metal Ages</th>
<th>4 🌟🌟🌟🌟</th>
<th>3 🌟🌟🌟</th>
<th>2 🌟🌟</th>
<th>1 🌟</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recalling information</strong></td>
<td>You can easily remember and discuss the information in the text and the objects seen in Pinterest</td>
<td>You can remember and discuss most of the information from the text and the objects seen in Pinterest</td>
<td>You can remember and talk about some of the information from the text and the objects seen in Pinterest</td>
<td>You can remember and talk very little about the text and the objects seen in Pinterest</td>
</tr>
<tr>
<td><strong>Understanding information</strong></td>
<td>You can understand very well how the development of metals improved the lives of people and the importance of irrigation</td>
<td>You can fairly well understand how the development of metals improved the lives of people and the importance of irrigation</td>
<td>You can understand somewhat how the development of metals improved the lives of people and the importance of irrigation</td>
<td>You find it difficult to understand how the development of metals improved the lives of people and the importance of irrigation</td>
</tr>
<tr>
<td><strong>Applying information</strong></td>
<td>You can easily use and apply the information to talk about the discovery and development of “new” metals in the metal ages and how it changed the lifestyle of people at that time</td>
<td>You can use most of the information to talk about the discovery and development of “new” metals in the metal ages and how it changed the lifestyle of people at that time</td>
<td>You can use some of the information to talk about the discovery and development of “new” metals in the metal ages and how it changed the lifestyle of people at that time</td>
<td>You can use little of the information to talk about the discovery and development of “new” metals in the metal ages and how it changed the lifestyle of people at that time</td>
</tr>
<tr>
<td><strong>Group work</strong></td>
<td>You participated in all the aspects of the unit with your group(s). You have worked extremely well and solved issues with group members</td>
<td>You participated in most of the aspects of the unit with your group(s). You have worked very well and solved most of the issues with group members</td>
<td>You participated in some of the aspects of the unit with your group(s). You have worked well and solved some issues with group members</td>
<td>You barely participated in the unit with your group(s). You have worked little and solved none of the issues with group members</td>
</tr>
<tr>
<td><strong>Project</strong></td>
<td>You participated in all the aspects of the creation of the project</td>
<td>You participated in most of the aspects of the creation of the project</td>
<td>You participated in some of the aspects of the creation of the project</td>
<td>You barely participated in the aspects of the creation of the project</td>
</tr>
</tbody>
</table>
**Assessment Rubric: Student self-evaluation**

<table>
<thead>
<tr>
<th>My project: Plan and build a dolmen</th>
<th>4 🌟🌟🌟🌟🌟</th>
<th>3 🌟🌟🌟🌟</th>
<th>2 🌟🌟🌟</th>
<th>1 🌟</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning and designing of the dolmen</td>
<td>I provided extensive input in the planning and designing of the dolmen structure and its surroundings</td>
<td>I provided quite a bit of input in the planning and designing of the dolmen structure and its surroundings</td>
<td>I provided some input in the planning and designing of the dolmen structure and its surroundings</td>
<td>I provided little input in the planning and designing of the dolmen structure and its surroundings</td>
</tr>
<tr>
<td>Group cooperation</td>
<td>I participated, discussed and agreed in all the creative process of the project together with my group</td>
<td>I participated, discussed and agreed in most of the creative process of the project together with my group</td>
<td>I participated, discussed and agreed in some parts of the creative process of the project together with my group</td>
<td>I didn’t participate, discuss and agree much in the creative process of the project together with my group</td>
</tr>
<tr>
<td>Creativity</td>
<td>I find my project extremely creative and original</td>
<td>I find my project very creative and original</td>
<td>I find my project quite creative and original</td>
<td>I find my project similar to other projects</td>
</tr>
<tr>
<td>Outcome</td>
<td>The final project was a real success</td>
<td>The final project was quite successful</td>
<td>There were some problems with the final</td>
<td>The final project didn’t work</td>
</tr>
</tbody>
</table>
Checklist

___ I got in touch with information about the Metal Ages, including; metallurgical processes, types of metals, beaker pots, dolmens and irrigation.

___ I viewed and reflected on images and videos of objects and structures from the Metal Ages.

___ I saw modern day representations of the Metal Ages casting process of bronze implements in order to help me relate to the difficulty of it.

___ I introspected on what the influence of metal development must have had on people's lives and had a debate about it.

___ I imagined what the surroundings were like thousands of years ago and I can now identify with ancient civilizations.

___ I produced a “mind map” exploring the topic of irrigation and compared it with my classmates' mind maps.

___ I projected into the past and supposed just how people from the Metal Ages discovered and developed these “new” metals and I expressed my ideas orally.

___ I analyzed the structures of dolmens and the use of beaker pots.

___ I planned designed and built a replica of a dolmen in a group with delegated responsibilities throughout the process.

___ I assessed and evaluated my progress, participation, recalling, understanding of information about the Metal Ages, my interaction with classmates and the stages I passed through to complete the dolmen project.
Congratulations on completing the module!