

# Critical Challenges

ACROSS THE CURRICULUM

## Sample Critical Challenge

### *Decipher the drawing*

Taken from  
**Legacies of Ancient Egypt**

#### Authors

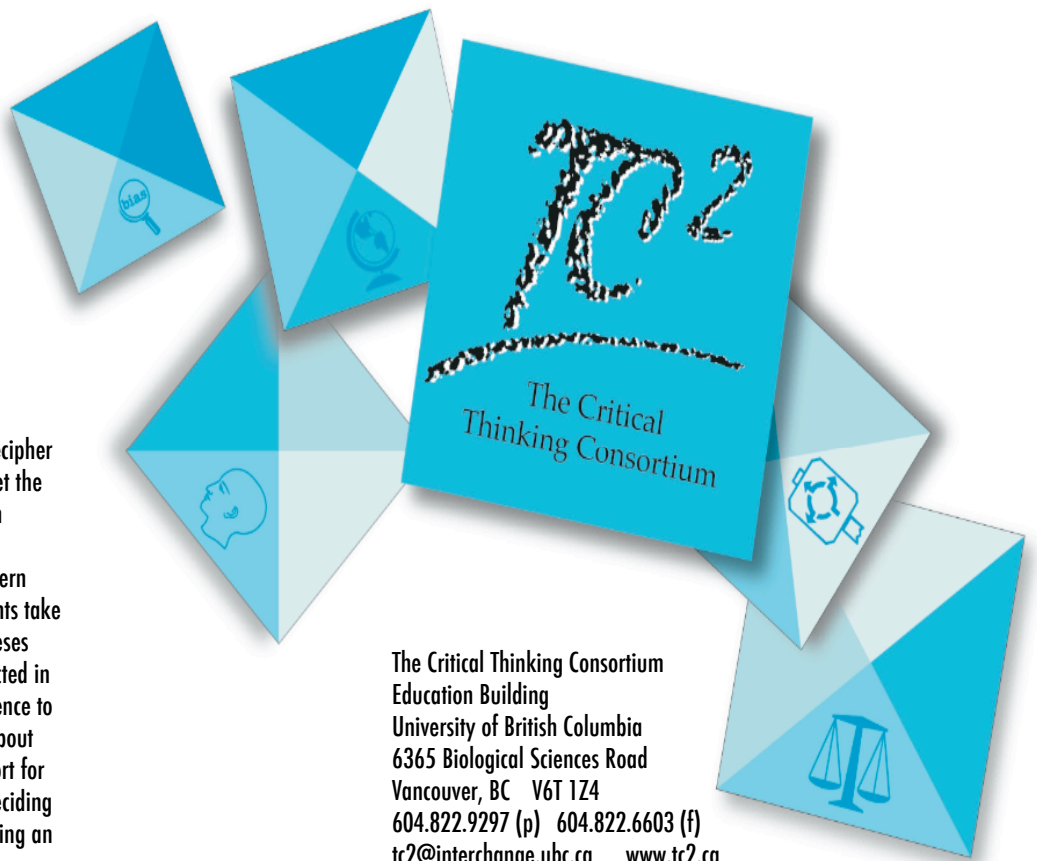
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#### Synopsis

In this introductory challenge, students learn to decipher a drawing depicting a scene in ancient Egypt. To set the stage for this unit, students situate ancient Egypt in relation to Canada. They compare similarities and differences between life in ancient Egypt and modern Canada. Using the 5W questioning strategy, students take on the role of an archaeologist in forming hypotheses and conclusions about the people and events depicted in a sample drawing. In pairs, students look for evidence to support or refute teacher-developed hypotheses about the drawing. They then assess the degree of support for the hypotheses and their comprehensiveness in deciding whether or not to accept these conclusions as offering an adequate explanation of the drawing.



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# Decipher the drawing

## Critical Challenge

**Critical question** Does the explanation adequately reflect the drawing?

### Overview

In this introductory challenge, students learn to decipher a drawing depicting a scene in ancient Egypt. To set the stage for this unit, students situate ancient Egypt in relation to Canada. They compare similarities and differences between life in ancient Egypt and modern Canada. Using the 5W questioning strategy, students take on the role of an archaeologist in forming hypotheses and conclusions about the people and events depicted in a sample drawing. In pairs, students look for evidence to support or refute teacher-developed hypotheses about the drawing. They then assess the degree of support for the hypotheses and their comprehensiveness in deciding whether or not to accept these conclusions as offering an adequate explanation of the drawing.

## Objectives

### Broad understanding

We can learn much about a civilization by interpreting drawings about its daily life.

### Requisite tools

#### **Background knowledge**

- information about ancient Egypt



#### **Criteria for judgment**

- criteria for a good explanation (e.g., supported with ample evidence, complete, raises no doubts)



#### **Critical thinking vocabulary**

- hypothesis and conclusion
- evidence



#### **Thinking strategies**

- asking the 5W questions



#### **Habits of mind**



# Suggested Activities

## Session One

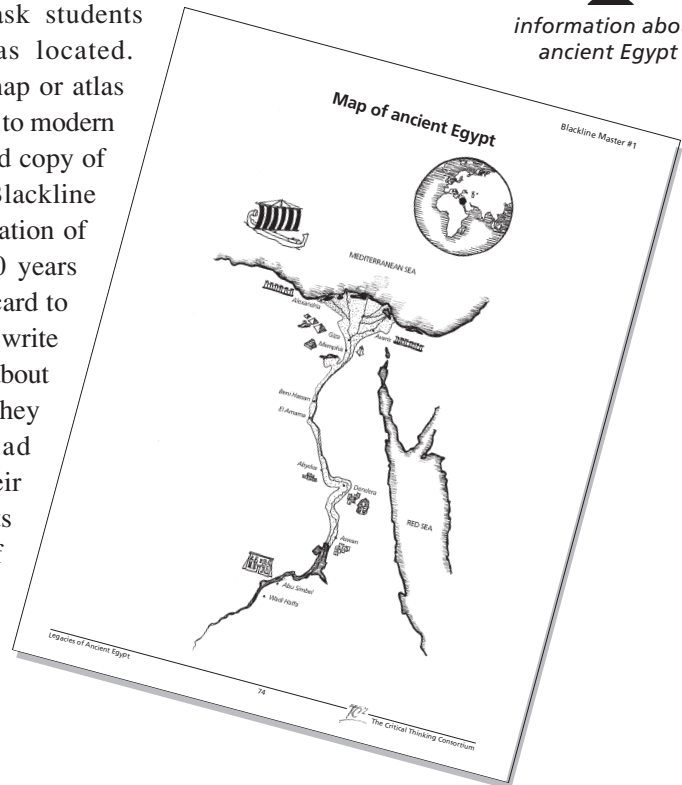
Blackline Masters #1-3



information about ancient Egypt

Access prior knowledge

- To introduce this unit, ask students where ancient Egypt was located. Direct students to a wall map or atlas to situate Canada in relation to modern Egypt. Display an overhead copy of *Map of ancient Egypt* (Blackline Master #1) to show the location of the empire as it was 3,000 years ago. Distribute one index card to every student. Ask them to write down one thing they know about life in ancient Egypt (e.g., they built pyramids, they had slaves, they mummified their dead). Encourage students to think of aspects of Egyptian society and things they did; some of the graphics on the map may be helpful in stimulating their thoughts.



Compare life in Egypt and Canada

- As illustrated below, on the board write the title, “Comparing ancient Egypt to modern Canada”. Under the title, create four columns with the headings: “Very similar,” “Slightly different,” “Very different” and “Don’t know”. Invite students to consider what it would have been like to live in ancient Egypt. How different would life have been in ancient Egypt from life today? Invite student volunteers to read out what they wrote on their index cards. Discuss with the class whether each Egyptian fact is something that is similar to or different from things in Canada today. Ask students to tape their index cards under the appropriate column. (A bulletin board could also be used, with students tacking their index cards under the posted headings.)

### Comparing ancient Egypt to modern Canada

Very similar	Slightly different	Very different	Don't know
<i>they ate rice</i>	<i>they wrote on a type of paper</i>	<i>they had slaves</i>	<i>they had droughts</i>

Offer an initial  
"overall" comparison

- After many index cards have been posted, ask students to take out a piece of paper (perhaps a journal, if this is available) and answer the following question and provide reasons: "How different was life in ancient Egypt compared to modern Canada?". This question acts as a preliminary investigation that is revisited in greater depth in the third critical challenge. Invite a few students to share their answers and reasons.

Introduce the  
archaeologist's role

- Explain to students that the class is going to learn more about ancient Egypt in order to determine how different/similar life really was. Explain that much of what we know about ancient Egypt comes from the work of archaeologists who look at murals/pictures that the Egyptians painted on walls and paper. Often there are no written explanations as to what was happening in these pictures, so archeologists are like investigative reporters: they make educated guesses as to how the ancient Egyptians lived, based on evidence in the drawings. Inform students that their job in this challenge will be to act as archaeologists in trying to explain what is going on in a drawing about ancient Egypt that you have found.

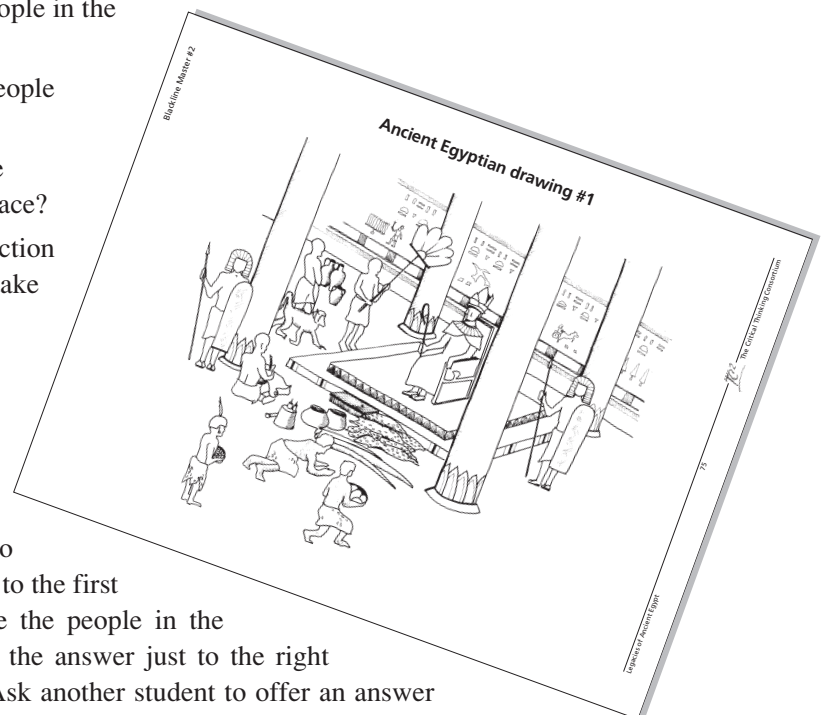
Interpret the  
drawing

- Create a single overhead transparency or distribute copies to each student of *Ancient Egyptian drawing #1* (Blackline Master #2). As a class or in small groups, invite students to interpret the drawing. Explain to students that archaeologists sometimes ask themselves the 5Ws when trying to find something out. Write the five questions down the left-hand side of the blackboard:



5W questions

- **Who** are the people in the drawing?
- **What** are the people doing?
- **Where** does the drawing take place?
- **When** did the action in the drawing take place?
- **Why** is the action happening?



Record student  
answers

- Invite a student to suggest an answer to the first question: Who are the people in the drawing? Record the answer just to the right of the question. Ask another student to offer an answer to the second question: What are the people doing? Record the answer beneath the first answer, and proceed until all five questions have been answered once.

**Introduce hypothesis and conclusion**

- Inform students that the 5Ws help archaeologists ask basic questions about what is going on in the drawing. Explain to students that once the 5Ws have been completed, archaeologists can begin to develop a hypothesis and draw a conclusion(s) to explain the drawing. In a corner of the board, write the words “hypothesis” and “conclusion” and, beneath these terms, record their definitions. A *hypothesis* is a possible answer or an educated guess which is based on information, but is not a proven fact. A *hypothesis* becomes a firm answer or a conclusion only after we have several pieces of evidence to prove that it is true.



*hypothesis and conclusion*

**Hypothesis**

**Sample definition**

*A possible answer based on some evidence.*

**Conclusion**

**Sample definition**

*A firm answer based on several pieces of evidence.*

**Develop hypotheses**

- Mention that each of the student answers to the 5W questions on our picture is a hypothesis: a suggestion about the truth, based on evidence. At this point, ask those students who volunteered their answers above, to provide evidence from the picture that led them to suggest their hypothesis. Explain that everyone may not agree with the answers. Ask the class to suggest other hypotheses or a more specific hypothesis for any of the 5W questions. For example, if it is suggested that the person on the chair is a king, an alternative hypothesis could be that the person is a queen. A more specific hypothesis might suggest that the person is an old or young king. Record students’ answers in subsequent columns to the right of the initial list of answers. Create as many columns as there are different hypotheses for any of the 5W questions.



*evidence*

	<b>hypothesis #1</b>	<b>hypothesis #2</b>	<b>hypothesis #3</b>
<b>Who</b> are the people in the drawing?			
<b>What</b> are the people doing?			
<b>Where</b> does the drawing take place?			
<b>When</b> did the action in the drawing take place?			
<b>Why</b> is the action happening?			

**Suggest alternative hypotheses**

- Remind students that a hypothesis is not a silly guess, but an educated guess based on evidence. If students have few rival hypotheses, suggest the following possibilities:
  - the person on the stage seems to be a king, with servants and soldiers surrounding him;
  - the people before the man on the chair are bringing gifts;
  - the people lying down are showing respect to the man in the chair;

**Compare hypotheses and conclusions**

- the event is taking place in a royal palace;
- the event happened during the day, long ago;
- the people are making a payment to the king.

- Encourage students to think of other hypotheses before reaching a firm conclusion. Remind them that a conclusion must have a lot of supporting evidence before we should accept it as true. On the blackboard, below the sample definitions of “hypothesis” and “conclusion”, list a few phrases that we typically use when offering a hypothesis and a conclusion. Invite students to suggest their own examples:

**Common words for a hypothesis**

- *Maybe*
- *I think*
- *I know*

**Common words for a conclusion**

- *Definitely*
- *It is possible that*
- *I am certain that*

**Provide sample explanation**

- Mention to the class that you have studied the drawing and you have a hypothesis for each of the 5W questions, together these make up a possible explanation of the scene in the picture. Explain that you want their advice before you reach a firm conclusion about what is happening in the scene. Read the following suggested explanation for the picture:

*A group of foreigners are coming to a king, who is surrounded by his servants and guards. They are bringing expensive gifts to the royal palace, on a summer day. The foreign people were conquered by the king's army and must bring gifts as a form of payment.*

**Introduce supporting evidence**

- Explain to students that in order for a hypothesis to become a firm, plausible conclusion, there must be several pieces of evidence supporting the hypothesis. To help students understand this idea, explain that evidence is information from the picture that suggests if the hypothesis is true or believable. For an example, present the hypotheses that in this picture the climate is hot. Ask students to find as much evidence in the picture as they can that supports this hypothesis (e.g., people are wearing minimal and light clothing, the servants are fanning the king). Explain to students that these observations provide supporting or corroborating evidence that confirm the hypothesis. The more evidence that is found the more believable the hypothesis becomes. If the hypothesis is well supported then a firm, plausible conclusion can be drawn. Therefore, with the evidence found in this drawing, the conclusion that Egypt has a hot climate seems plausible.



evidence

## Look for evidence

- Ask students to work in pairs to find evidence to support or refute (prove an error or incorrectness) the hypotheses that you presented to the class. Distribute copies of *Explain the drawing* (Blackline Master #3) to each pair of students. You may also want to distribute individual copies of the drawing (Blackline Master #2) to each group. Point out that the data chart breaks the explanation up into separate hypotheses covering each of the 5W questions. Direct students to locate as much evidence as they can from the picture in relation to each of the suggested hypotheses.

Blackline Master #3

Name: \_\_\_\_\_

Hypotheses	Evidence
<b>WHO</b> is in the drawing? <i>A king, his servants and guards, people from another place</i>	
<b>WHAT</b> is the person/people doing? <i>The foreign people are presenting expensive gifts to the king</i>	
<b>WHERE</b> does the drawing take place? <i>A royal palace</i>	
<b>WHEN</b> does the action in the drawing take place? <i>On a summer day</i>	
<b>WHY</b> is the action happening? <i>The foreign people are presenting gifts as a form of payment</i>	

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## Present criteria for good explanations

- When students have completed Blackline Master #3, ask them to share their findings with the class or with another pair of students and briefly discuss the evidence generated. Ask the class the support for your hypotheses: Are they simply hypotheses? Or should they become conclusions which together will form a believable explanation for the drawing? Lead the class in a discussion on the criteria needed for a hypothesis to be accepted as a sound conclusion. We suggest the following criteria for a good explanation:
  - is complete—answers all 5W questions in detail;
  - is supported with a lot of evidence—there are many pieces of information from the picture to support the explanation;
  - raises no doubts—we are sure about all parts of the explanation.



criteria for a good explanation

Invite students to add any other criteria they feel is important.

## Pose the critical question

- When students understand the criteria for a good explanation present the critical question to the class:

*Does the explanation adequately reflect the drawing?*

Present criteria for good explanations

- Distribute a copy to each pair of students of *Judging the explanation* (Blackline Master #4). Direct them to rate the explanation based on the criteria discussed above, then provide reasons for their ratings. At the bottom of the sheet, students should write any questions they have or ideas for improving the explanation.

Discuss the explanation

- As a class, discuss whether the explanation is still a hypothesis or if it deserves to be accepted as a conclusion. Invite students to share questions or suggestions they have about improving or altering the explanation. If possible, come to a consensus on any improvements that could be made to the explanation.

**Judging the explanation** Blackline Master #4

Name: \_\_\_\_\_

Criteria	Rating	Reasons for rating
<b>Complete</b> All 5M questions are answered in detail.	The explanation... <input type="checkbox"/> is very detailed <input type="checkbox"/> has some detail <input type="checkbox"/> has almost no detail	
<b>Evidence</b> There is a lot of evidence from the picture to support the explanation.	The explanation is supported with... <input type="checkbox"/> lots of evidence <input type="checkbox"/> some evidence <input type="checkbox"/> no evidence	
<b>No doubts</b> We are sure about all parts of the explanation.	The explanation raises... <input type="checkbox"/> no doubts <input type="checkbox"/> some doubts <input type="checkbox"/> lots of doubts	
Overall the explanation is...		
<input type="checkbox"/> very good <input type="checkbox"/> good <input type="checkbox"/> poor		

Questions/suggestions we have...

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## Evaluation

### Blackline Master #5

Assess student ratings

- Assess each student's ratings and explanations as recorded on *Judging the explanation* (Blackline Master #4) using the rubric *Assessing the assessment* (Blackline Master #5). According to this rubric the task is worth 10 marks and is assessed on two criteria:
  - completeness of the chart,
  - reasonableness of the ratings.

**Assessing the assessment** Blackline Master #5

Name: \_\_\_\_\_

Use the following rubric to assess the student's ratings of the explanation for the drawing. Award intermediate marks for the answers falling between the descriptors.

	Underdeveloped	Competent	Well developed
<b>Completeness of chart</b>	The ratings are missing and are not accompanied by any reasons.	Two ratings are provided and accompanied by a reason for each of these ratings.	All four ratings are provided and are accompanied by at least two reasons each.
<b>Reasonableness of the ratings</b>	The reasons do not support any ratings.	The reasons support two of the ratings.	The reasons clearly support all four ratings.
	1	3	5

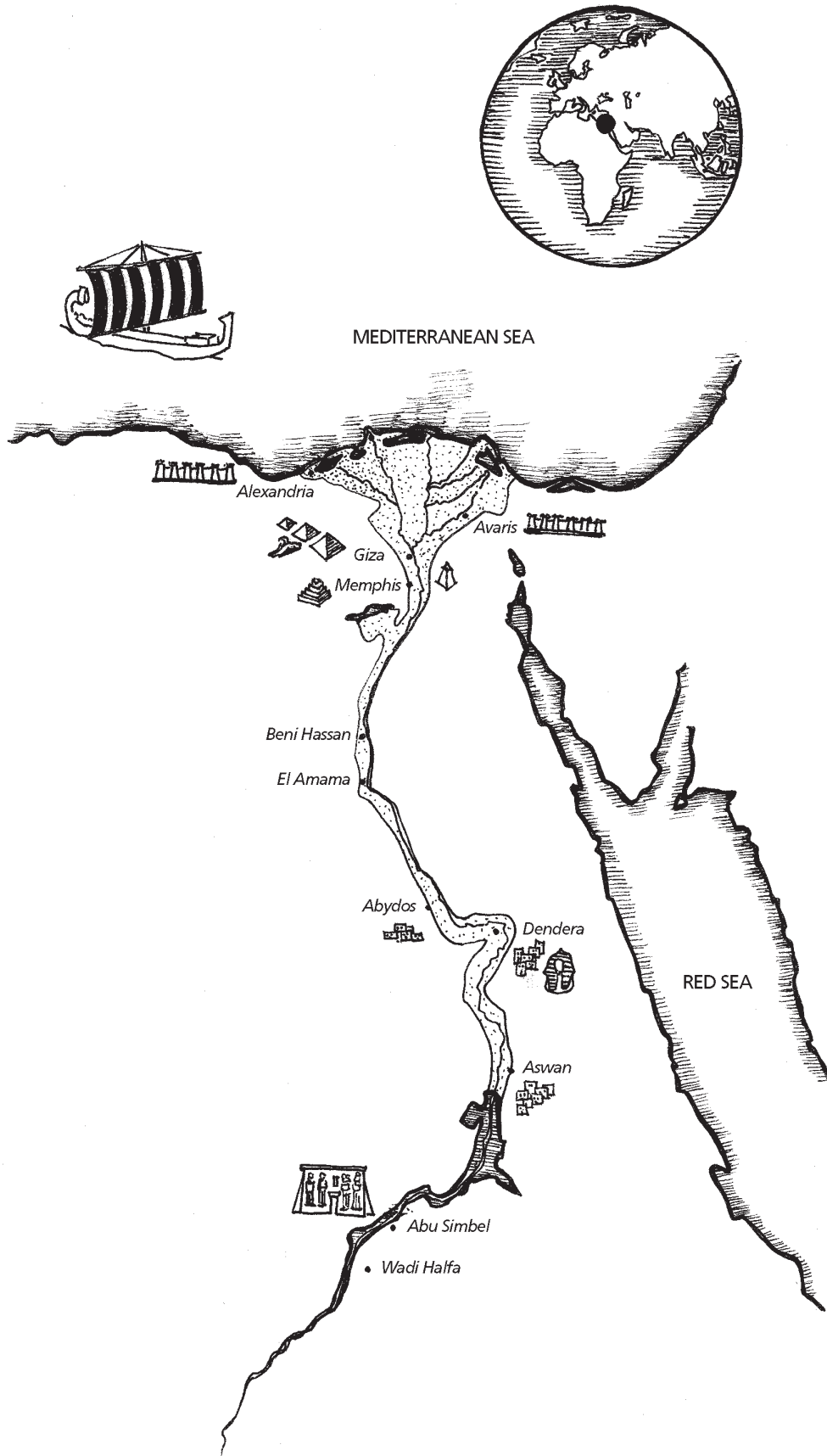
Comments: \_\_\_\_\_

TOTAL / 10

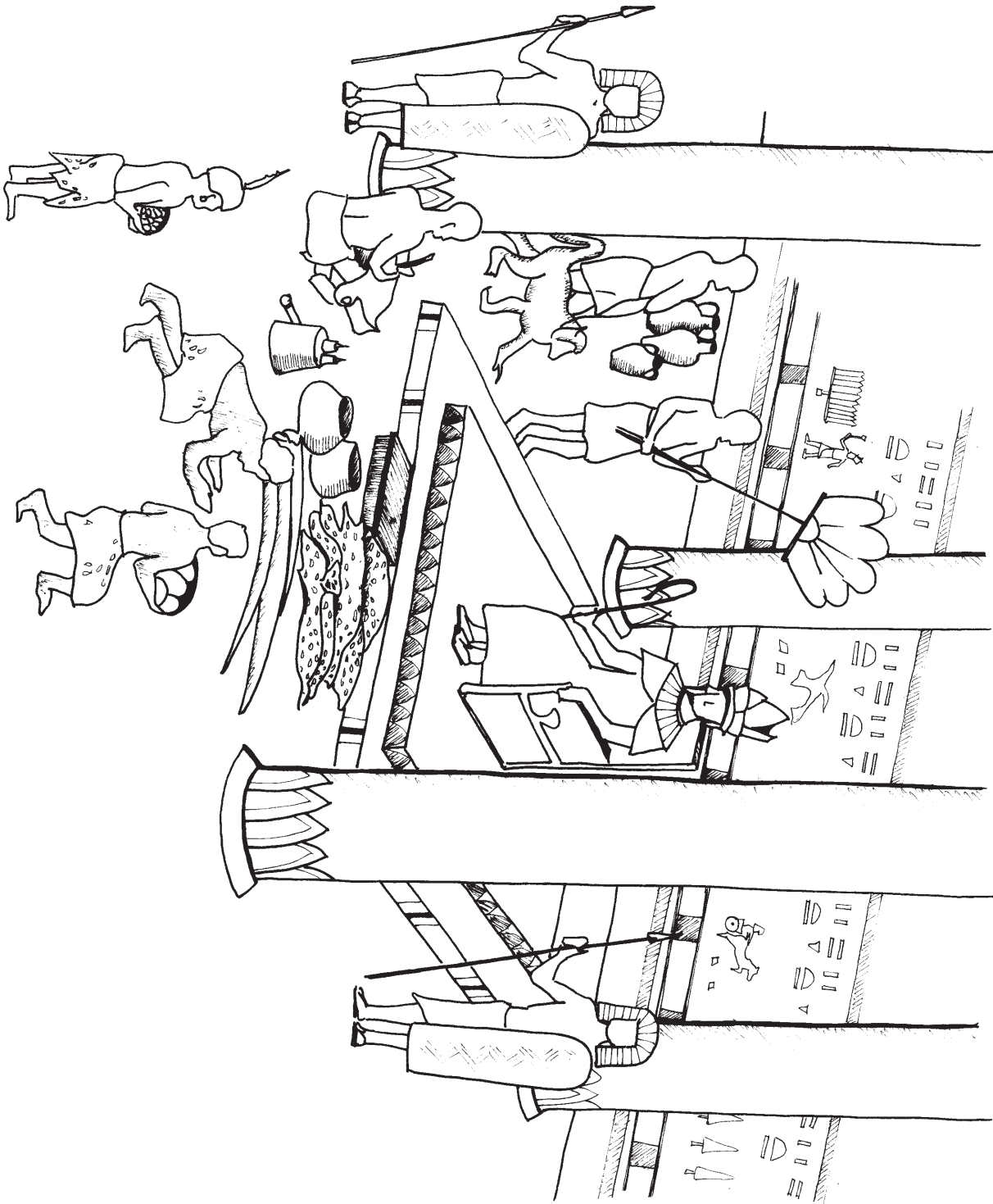
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# Map of ancient Egypt



# Ancient Egyptian drawing #1



## Explain the drawing

Hypotheses	Evidence
<p><b>WHO</b> is in the drawing?</p> <p><i>A king, his servants and guards, people from another place</i></p>	
<p><b>WHAT</b> is/are the person/people doing?</p> <p><i>The foreign people are presenting expensive gifts to the king</i></p>	
<p><b>WHERE</b> does the drawing take place?</p> <p><i>A royal palace</i></p>	
<p><b>WHEN</b> does the action in the drawing take place?</p>	
<p><i>On a summer day</i></p> <p><b>WHY</b> is the action happening?</p> <p><i>The foreign people are presenting gifts as a form of payment</i></p>	

## Judging the explanation

Criteria	Rating	Reasons for rating
<p><b>Complete</b></p> <p>All 5W questions are answered in detail.</p>	<p>The explanation...</p> <p><input type="checkbox"/> is very detailed  <input type="checkbox"/> has some detail  <input type="checkbox"/> has almost no detail</p>	
<p><b>Evidence</b></p> <p>There is a lot of evidence from the picture to support the explanation.</p>	<p>The explanation is supported with...</p> <p><input type="checkbox"/> lots of evidence  <input type="checkbox"/> some evidence  <input type="checkbox"/> no evidence</p>	
<p><b>No doubts</b></p> <p>We are sure about all parts of the explanation.</p>	<p>The explanation raises...</p> <p><input type="checkbox"/> no doubts  <input type="checkbox"/> some doubts  <input type="checkbox"/> lots of doubts</p>	
	<p>Overall the explanation is...</p> <p><input type="checkbox"/> very good  <input type="checkbox"/> good  <input type="checkbox"/> poor</p>	

**Questions/suggestions we have...**

## Assessing the assessment

Use the following rubric to assess the student's ratings of the explanation for the drawing. Award intermediate marks for the answers falling between the descriptors.

	<b>Underdeveloped</b>	<b>Competent</b>	<b>Well developed</b>
<b>Completeness of chart</b>	The ratings are missing and are not accompanied by any reasons.  <b>1</b>	Two ratings are provided and accompanied by a reason for each of these ratings.  <b>3</b>	All four ratings are provided and are accompanied by at least two reasons each.  <b>5</b>
<b>Reasonableness of the ratings</b>	The reasons do not support any of the ratings.  <b>1</b>	The reasons support two of the ratings.  <b>3</b>	The reasons clearly support all four ratings.  <b>5</b>

**TOTAL** / 10

Comments: