



# The Golden Ratio & the Great Pyramid of Egypt Lapbook

$\Phi$



$\pi$

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# The Golden Ratio & the Great Pyramid Lapbook/Notebook Templates Instructions

**Instructions:** Students can decide whether to use these templates as a lapbook or for use as an interactive notebook for this unit study. The template information corresponds with the PowerPoint lesson's information and specifically with the review/quiz questions as additional reinforcement. Therefore the answers can all be found within the PowerPoint.

If students cannot use a color printer, then, they can cut out the black and white versions of each template and color them as close to the original colors as possible. For these templates, students are to cut along the dotted lines and fold on the dark colored lines. If students are coloring any of the images, it's suggested to first color any images before cutting out and gluing them to their surfaces. Follow additional instructions per template page on the following pages. Students can layout the image any way they want on their media of choice.

Students are also welcome to add more images than what is offered here to their lapbook or notebook.



1.



2.

Maps of the  
Great Pyramids of Giza

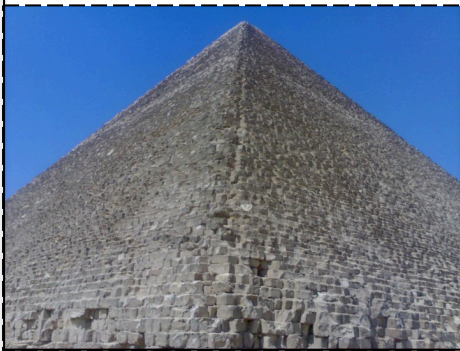
## Sample layout

3.

When was the Great Pyramid  
built?

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4. The Great Pyramid's Stones



5.

**Mathematics  
Found in the  
Great Pyramid**

6.

**The Kepler  
triangle, Golden  
Ratio & the  
Great Pyramid**

# The Great Pyramid, one of the Seven Wonders of the Ancient World!

1.

Glue this side to  
surface.



Cut along the dotted lines and fold along the dark line.

The Great Pyramid, one of the Seven Wonders of the Ancient World!

1.

**Glue this side to surface.**



Cut along the dotted lines and fold along the dark line.

**1. The Great Pyramid, one of the Seven Wonders of the Ancient World by 16th-century Dutch artist Maarten van Heemskerck.**

The Seven Wonders of the Ancient World  
(from left to right, top to bottom):

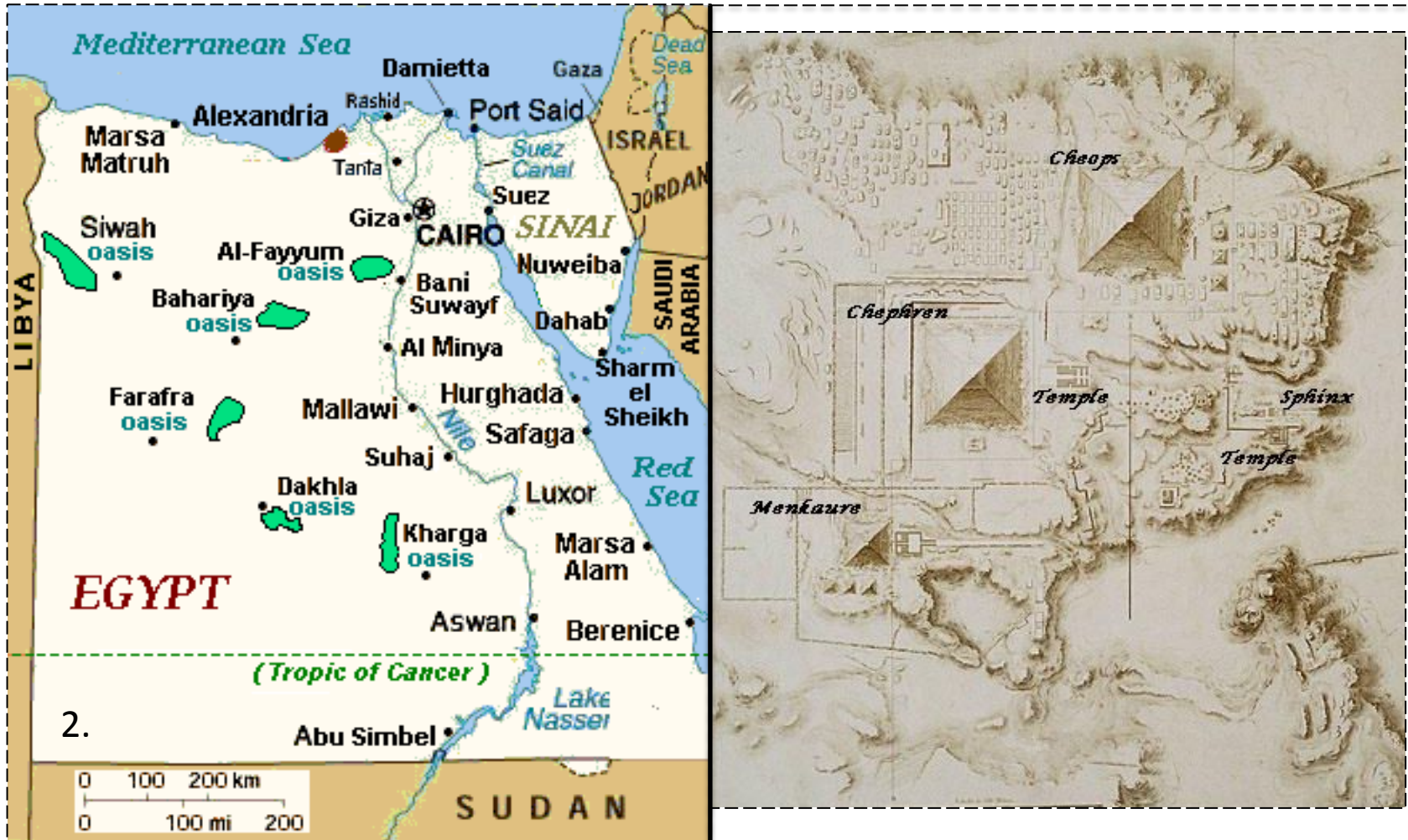
- |                                 |                               |
|---------------------------------|-------------------------------|
| 1. Great Pyramid of Giza        | 5. Mausoleum at Halicarnassus |
| 2. Hanging Gardens of Babylon   | 6. Colossus of Rhodes         |
| 3. Temple of Artemis at Ephesus | 7. Lighthouse of Alexandria   |
| 4. Statue of Zeus at Olympia    |                               |

**Cut out along the dotted lines. Glue to the blank inside of either the color or black and white version of the Seven Wonders booklet.**



## 2. Maps of the Great Pyramids of Giza

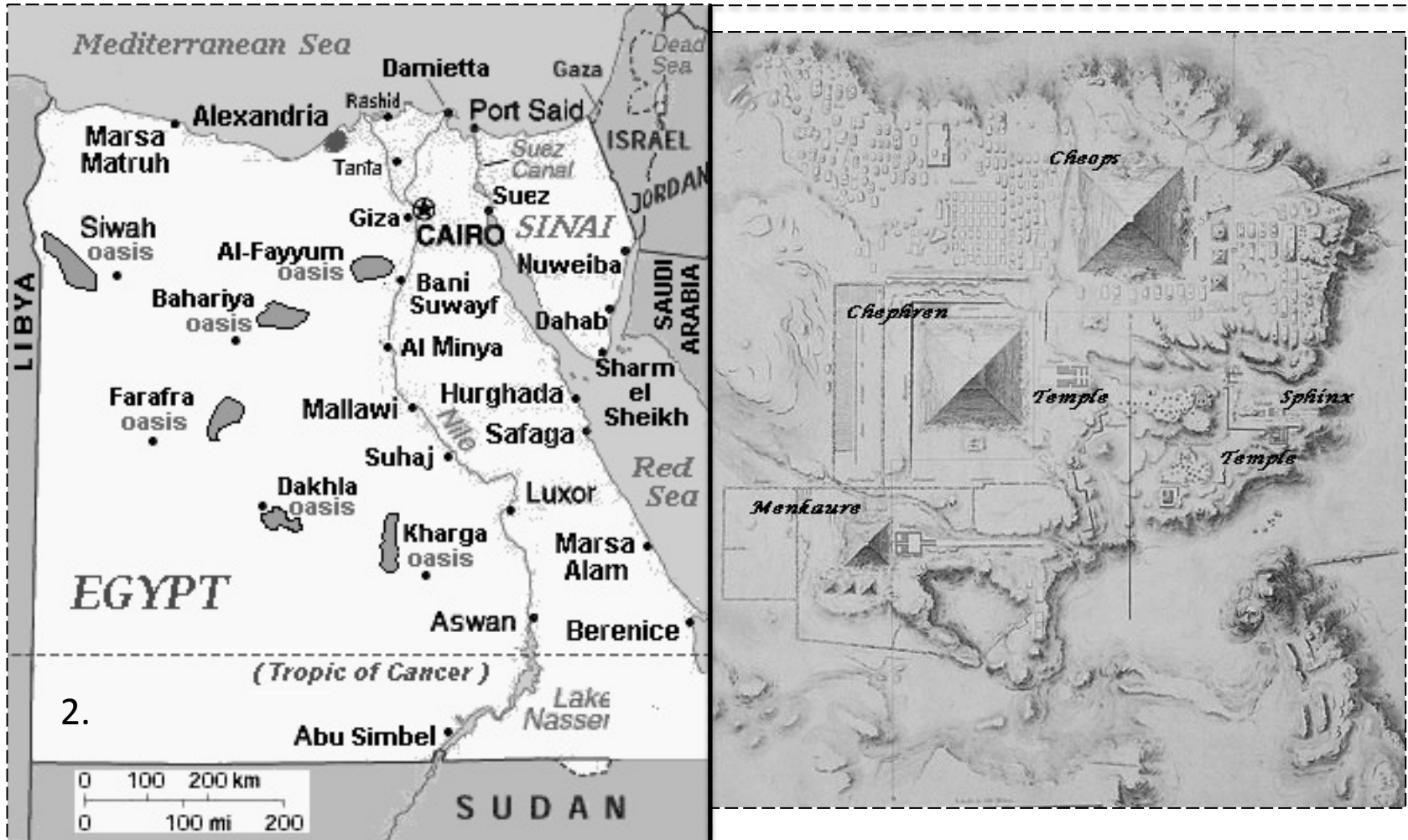
On the left map, circle Giza in red. On the right map, circle Cheops or the Great Pyramid in black. The booklet folds so that the maps are on the inside. Glue the back side of the map of the pyramids to your surface.





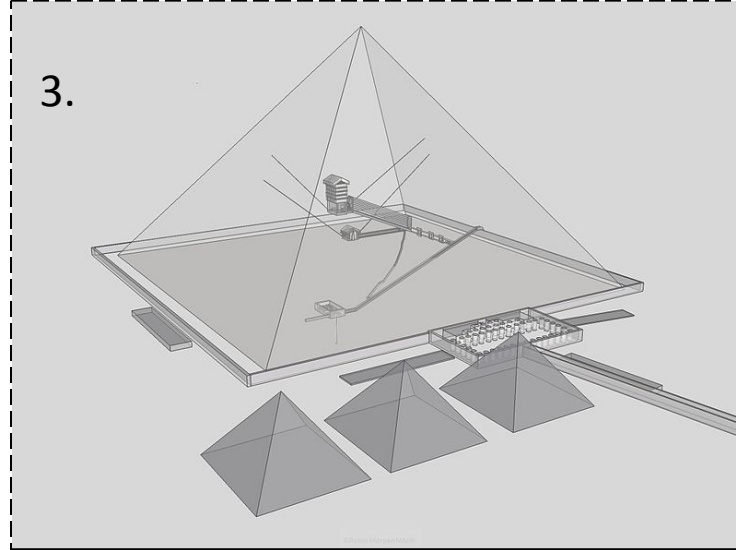
## 2. Maps of the Great Pyramids of Giza

On the right map, circle Giza in red. On the left map, circle Cheops or the Great Pyramid in black. The booklet folds so that the maps are on the inside. Glue the back side of the map of the pyramids to your surface.



When was the Great Pyramid built? 3.

---



3.  
Most archaeologists believe the pyramid was built for what purpose?

---



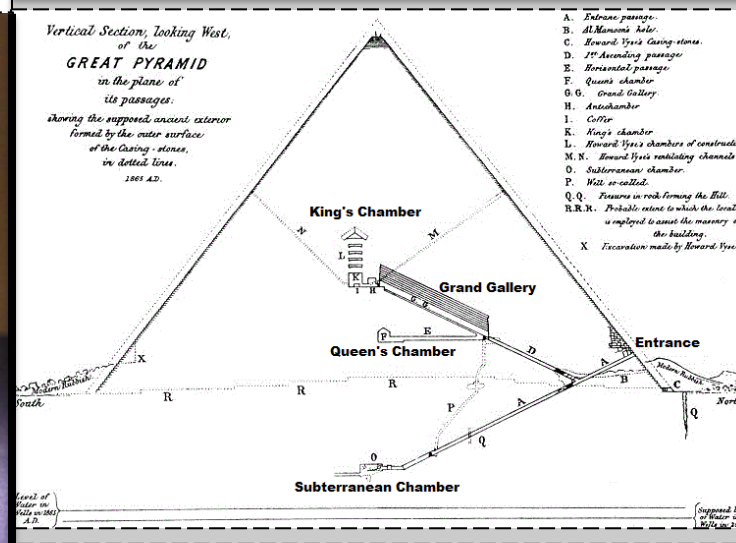
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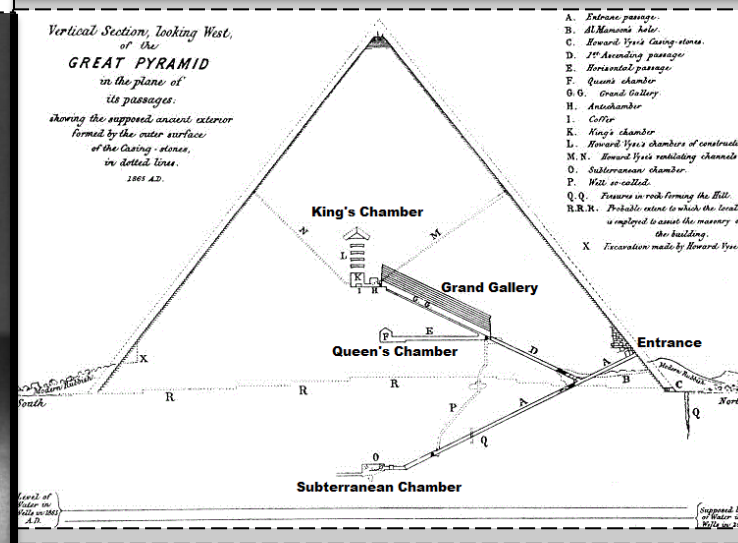
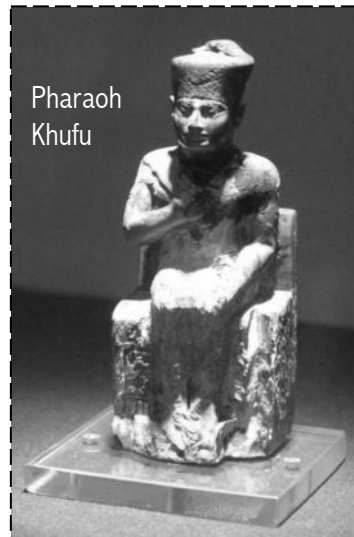
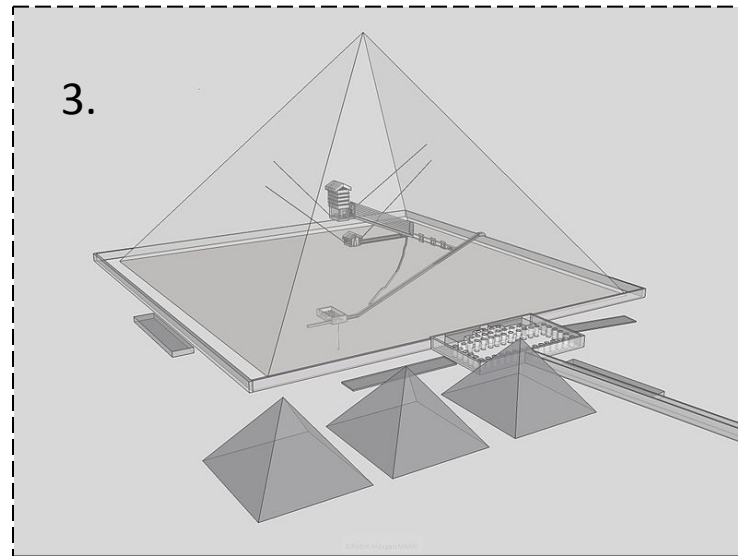


Pharaoh Khufu



After cutting out the templates, fold Pharaoh Khufu inside over top of the pyramid inside map. Glue the text that fits the Pharaoh's picture onto the back of the statue's image. Fold the 3D image of the pyramid down over top of both images. Paste the question, "When was the Great Pyramid built"? Over top of the backside of the grayed pyramid image.

# Optional black and white foldable booklet for #3.



## The Great Pyramid's Stones

4.



The Great Pyramid was built with what two main types of stone.

Stone used for the outer casing:

---

Stone used for the inner core, and the main stone we see on the outside of the Pyramid today:

---

Glue the thin tab at the top of the left image over top of this thin tab.



**After cutting out the templates, glue the templates together. Glue the questions on the underside of the template.**



Glue this piece to the underside of the top flap.



Mathematics  
Found in the  
Great Pyramid

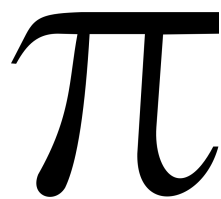
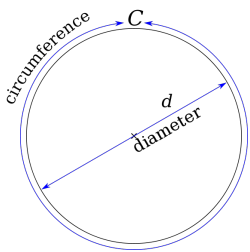
### 5. Phi or the Golden Ratio

Found in art,  
architecture  
and appears  
throughout:



\_\_\_\_\_

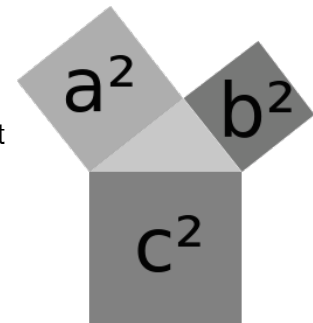
5. Pi is the \_\_\_\_\_ of  
a circle in relation to its  
diameter



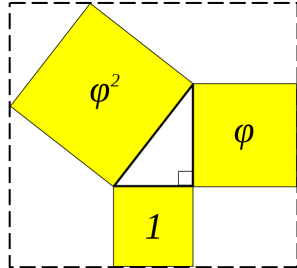
Cut out the template. Then with pictures  
facing down and blank side facing up,  
Fold in right flap, then  
fold in left flap.  
Bring down top flap.  
Glue this side to your page.

Pythagorean Theorem with  
formula as: \_\_\_\_\_

Founded by  
Pythagoras (about  
570 – 495 BC)

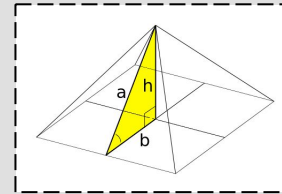


## 6. The Kepler Triangle



Formed by three golden ratio squares or triangle's square edges, it makes the golden ratio, 1.618!

- Area of Triangle:  $(\frac{1}{2}B \times H) / 2$ , 1 : 1.272 : 1.618
- Kepler triangle found in Great Pyramid



Cut out the templates. Fold the two-page booklet. Glue the title on the back of the Kepler triangle.

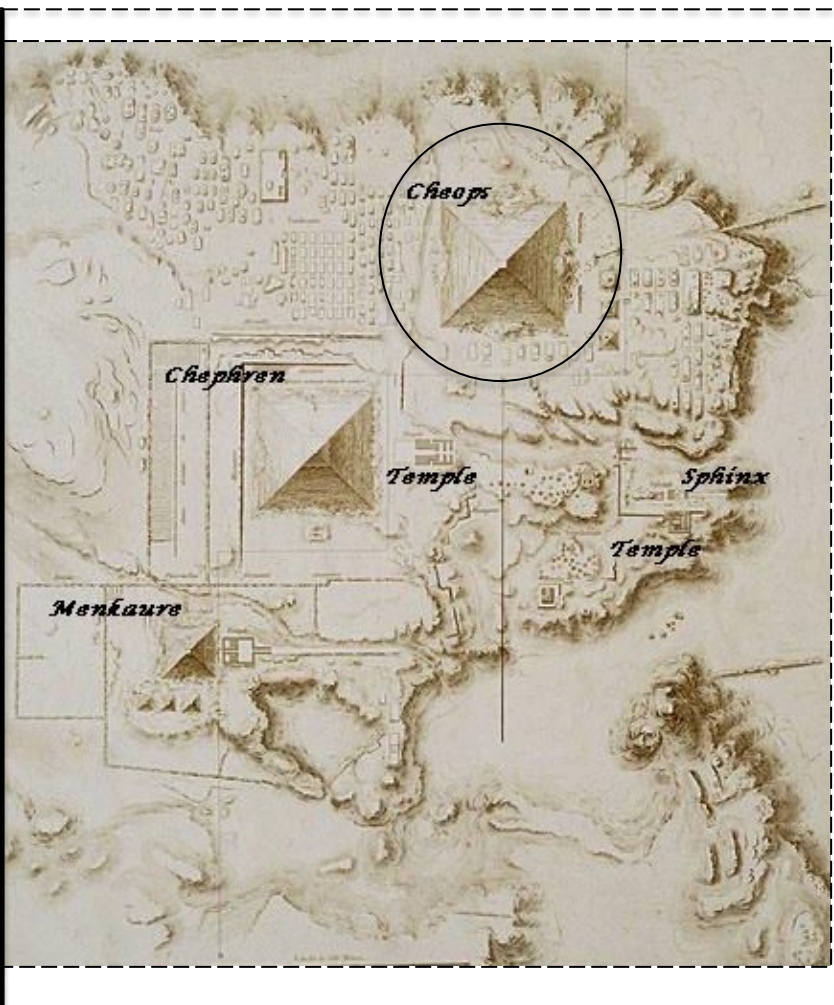
6.

The Kepler triangle,  
Golden Ratio & the  
Great Pyramid

**Lapbook/Notebook  
Templates Answer Key**

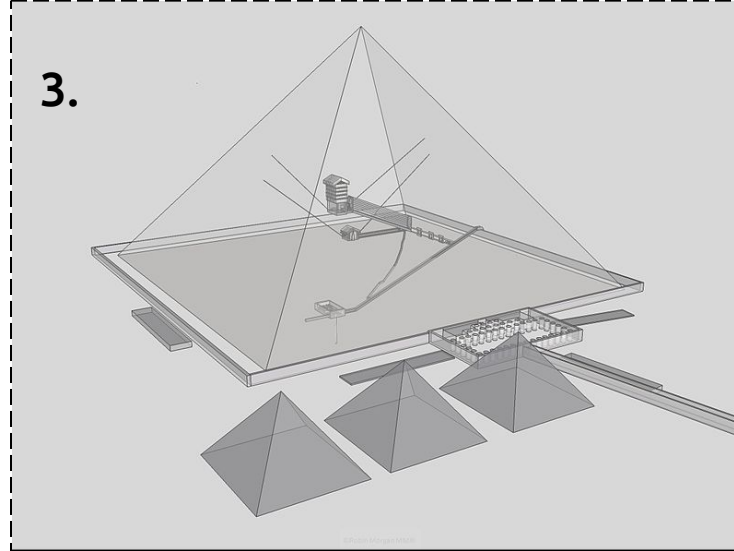
## 2. Maps of the Great Pyramids of Giza

On the left map, circle Giza in red. On the right map, circle Cheops or the Great Pyramid in black. The booklet folds so that the maps are on the inside. Glue the back side of the map of the pyramids to your surface.

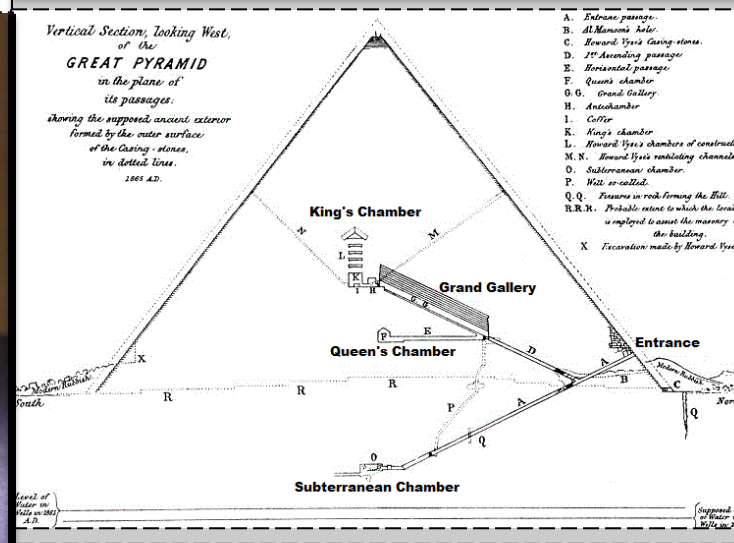




When was the Great Pyramid built? **3.**  
**2580–2560 BC**



Most archaeologists believe the pyramid was built for what purpose?  
**Pharaoh Khufu's tomb**



After cutting out the templates, fold Pharaoh Khufu inside over top of the pyramid inside map. Glue the text that fits the Pharaoh's picture onto the back of the statue's image. Fold the 3D image of the pyramid down over top of both images. Paste the question, "When was the Great Pyramid built"? Over top of the backside of the grayed pyramid image.

## The Great Pyramid's Stones

4.



The Great Pyramid was built with what two main types of stone.

Stone used for the outer casing: **limestone**

Stone used for the inner core, and the main stone we see on the outside of the Pyramid today:

**granite**

Glue the thin tab at the top of the left image over top of this thin tab.



After cutting out the templates, glue the templates together. Glue the questions on the underside of the template.

Glue this piece to the underside of the top flap.



Mathematics  
Found in the  
Great Pyramid

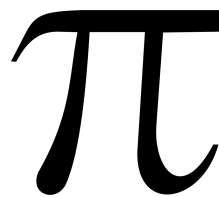
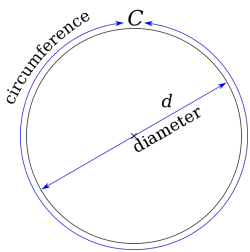
### 5. Phi or the Golden Ratio

Found in  
art,  
architecture  
and appears  
throughout:



**nature**

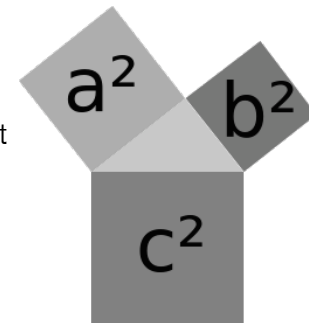
5. Pi is the **circumference** of a  
circle in relation to its diameter



Cut out the template. Then with  
pictures facing down and blank  
side facing up,  
Fold in right flap, then  
fold in left flap.  
Bring down top flap.  
Glue this side to your page.

### Pythagorean Theorem with formula as: $a^2 + b^2 = c^2$

Founded by  
Pythagoras (about  
570 – 495 BC)



# Image Credits

1. The Seven Wonders of the Ancient World – image in the public domain
2. Country of Egypt map – in the public domain
3. Map of the Great Pyramids of Giza necropolis by Prisse de l'Avennes, 1878. Image in the public domain.
4. 3-D view created by R.F. Morgan and Great Pyramid diagram created by Jeff Dahl.
5. Statue of Pharaoh Khufu (#3). Image in the public domain.
6. #4 image of the Great Pyramid photographed by Moody.
7. #4 image of a Great Pyramid casing stone in the British Museum photographed by CaptMondo.
8. #5 images – pi and phi symbols from OpenClipart and in the public domain. The Pi circumference image is in the public domain and the Pythagorean Theorem diagram was created by KaiMartin.