

## Muslim Achievements Stations activity

Copy this table into your comp books  
(skip 4-6 lines per topic)

<u>Topic</u>	<u>Observations &amp; Work</u>	<u>Vocabulary</u>	<u>Notes &amp; Reflections</u>
Math			
Art			
Science & Technology			
Astronomy			
Literature			
Medicine			

## ACHIEVEMENTS IN MATHEMATICS

### Arabic vs. Roman numbers

<u>Arabic numerals</u> <u>(from India)</u>	<u>Roman numerals</u>	<u>Arabic numerals</u> <u>(from India)</u>	<u>Roman numerals</u>
0		10	X
1	I	11	XI
2	II	12	XII
3	III		
4	IV	20	XX
5	V	90	XC
6	VI		
7	VII	50	L
8	VIII	100	C
9	IX	1000	M

Now for some math problems:  
Solve all 8 problems on your paper.

$\begin{array}{r} \text{II} \\ + \text{IV} \\ \hline \end{array}$	$\begin{array}{r} \text{VIII} \\ \times \text{III} \\ \hline \end{array}$
$\begin{array}{r} \text{XC} \\ - \text{XX} \\ \hline \end{array}$	$\text{XII} \overline{) \text{XXXVI}}$

$\begin{array}{r} 3 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$
$\begin{array}{r} 19 \\ - 5 \\ \hline \end{array}$	$3 \overline{) 30}$

## Notes & Reflections

### Notes:

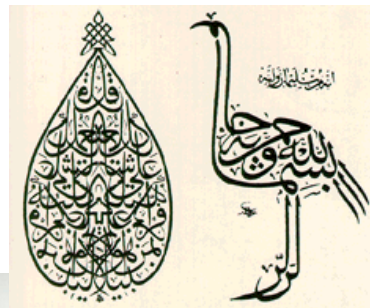
- Borrowed number system & number "0" from Indians
- Added to work done by Greeks, Egyptians, & Indians
- Islamic mathematicians also invented algebra

### Reflection Questions:

- Compare math with Roman numerals & math with Arabic numbers.
- What was the significance of Arabic numerals?
- Why do you think having the number "0" matters?

## ACHIEVEMENTS IN ART

Describe the art & calligraphy that you see here. Does the calligraphy look like anything?



## Reflection Questions

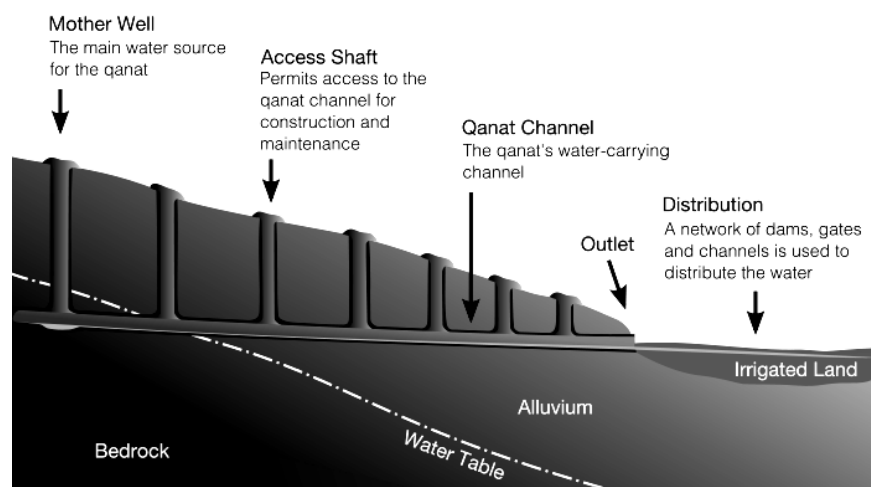
- What do you notice about Muslim art & calligraphy?
- How is Muslim art different or similar to other art that you've seen?

## Notes

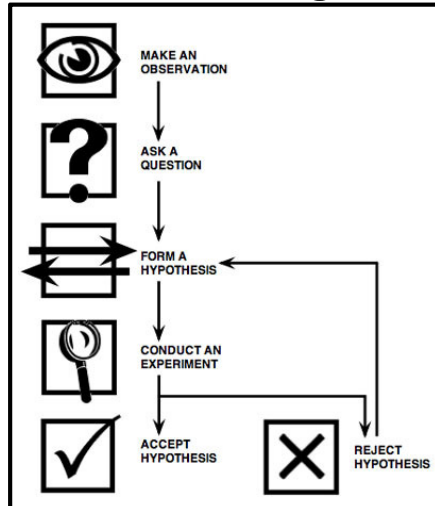
- **Calligraphy** – “fancy” handwriting
- **Geometric designs** – repeating patterns using lines & shapes; found in Islamic art
- Many Muslim artists didn't use people or animals in their works because they thought that only Allah should create humans and animals.

## ACHIEVEMENTS IN SCIENCE & TECHNOLOGY

What's being shown here?



What is shown in each  
of these images?

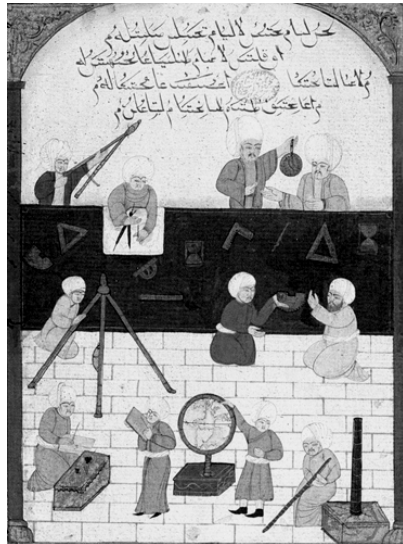


## Achievements

- **Qanat system** – underground system for carrying water  
– Significant because \_\_\_\_\_
- **Scientific Method** – developed by Muslim scholars to find answers to questions  
– Significant because \_\_\_\_\_
- **Papermaking** – borrowed from Chinese & improved upon by Muslims  
– Significant because \_\_\_\_\_

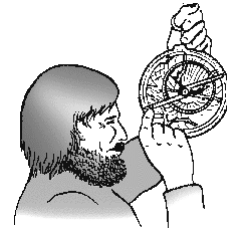
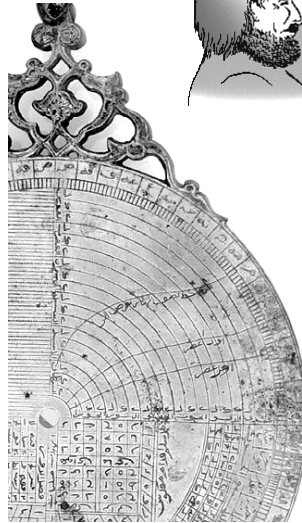
## ACHIEVEMENTS IN ASTRONOMY

What's being shown on the left?  
Identify the picture on the right.





What do you think the **astrolabe** was used for?



## Vocab & Notes

### Vocabulary

- **Astronomy** – study of planets & stars
- **Astrolabe** – tool used to tell time & complete calculations using the position of the stars

### Notes

- Added to earlier work done by others
- Mapped the solar system
- Invented **astrolabe**
- Hypothesized that earth was round (before Europeans did)

## ACHIEVEMENTS IN LITERATURE

Compare & contrast the two poems below. Glossary below each poem.

A Book of Verses underneath the Bough,  
A Jug of Wine, a Loaf of Bread – and Thou  
Beside me singing in the wilderness –  
O, Wilderness were Paradise enow

**Book of Verses:** book of poetry

**Bough:** tree branch

**Thou:** you

**Enow:** enough

The Moving Finger writes; and, having writ,  
Moves on: nor all thy piety nor wit,  
Shall lure it back to cancel half a Line,  
Nor all your Tears wash out a Word of it.

**Writ:** written

**Piety:** goodness & devotion

**Wit:** cleverness or intelligence

**Lure:** to tempt or attract

### Discussion (in your group):

1. What does the speaker in the first poem need to be happy?
2. What is the poet saying about the past in the second poem?
3. How do the poems compare to each other? What is the mood like in each poem?

### Discussion Questions (write answers in “Vocab” section in Literature)

1. What does the speaker in the first poem need to be happy?
2. What is the poet saying about the past in the second poem?
3. How do the poems compare to each other? What is the mood like in each poem?

### Notes

- ***Omar Khayyam*** – Persian poet & scholar who wrote about religion, life, & emotion
- ***The Thousand and One Nights*** – stories about life under Abbasid rule, adventure, & fantasy
- Poetry – topics included life in the desert, love & romance, and tribal loyalty/warfare
- Literature – Muslims also wrote fables (stories with lessons) & histories in addition to poems

## ACHIEVEMENTS IN MEDICINE

Discuss what these images are & write down some of your ideas & guesses.



What the earlier images were  
(write in “Vocab” section in Medicine)

- **Top left:** Muslim doctors setting (i.e. fixing) a dislocated shoulder
- **Bottom left:** Muslim dentist at work
- **Right:** Image of medical instruments used by Muslim doctors

## Notes

- Muslims improved on earlier discoveries
- Abbasids built hospitals throughout empire
  - New doctors learned skills by practicing & treating patients at the hospital in Baghdad
  - Treated everyone (even the poor)
- Medical encyclopedias written by Muslims
  - Collected & organized medical knowledge on different topics (bonesetting, anesthesia, surgery, dentistry, etc.)