



GRADES 9-12

Astronomy & Culture

Go back in history and learn about some of the cultures that have engaged in the timeless quest to understand their place in the Universe—from ancient Egypt and South America to medieval Europe and the Middle East.

Guide Overview

This guide includes suggestions for how to engage your students and facilitate an age-appropriate learning experience in the **Astronomy & Culture** exhibit.

Highlights & Related Questions



FIND Have students find the “Who Used These Tools?” display on the right side of the first glass case in the exhibit.

DO Instruct students to choose one historical object to learn more about.

ASK In medieval times, who do you think used these tools? **Teachers, Practical Astronomers, Mathematicians, Instrument Designers.** Did they all use these tools in the same way? **No.** What were some ways people used these tools? Compare and contrast these tools to each other.



FIND Direct students to the Medieval Classroom further on in the gallery.

DO Instruct students to try on the medieval robes and sit in the benches. Have them read the advice that a parent gives to his son.

ASK Is the advice similar or different from the advice that your parents give you about school? Does this classroom look like our classroom? How is it similar and how is it different? Are the seats comfortable? Do you think the classes are delivered as lectures or were they discussion style classes?



FIND Have students find the window in the front corner of the Medieval Classroom.

DO Instruct them to make observations about the sundial in the window. Also have them locate other sundials near this one.

ASK What do you think this sundial was used for? **To tell time.** What time is it according to this sundial? **11am.** Do other sundials you can find look similar or different to this one? How? Describe different parts of the sundial you see. What might these parts be for?



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- FIND** Guide students to find the Sundial Shadows Interactive stand.
- DO** Encourage students to make observations as they move the sundial from morning through evening, and from summer to winter.
- ASK** What is a sundial? **A device used to tell time using shadows cast by the sun.** How do you think it works? **Look for an answer in this area.** What happens to the shadow if you move the Sun's position from summer to winter or vice versa?
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- FIND** Have students find the Make an Astrolabe station.
- DO** Encourage students to build an astrolabe as instructed at the desk or experiment with the moving parts of the astrolabe. Have them use the "How high is that star?" interactive to see what you can tell about the location of the star Arcturus.
- ASK** How many parts of the astrolabe can move? **All of them!** What do you think an astrolabe was used for? **To locate the position of the Moon, Sun and Stars.** Do you think an astrolabe was difficult or easy to use? Why do you think that?
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- FIND** Have students locate the stool and counter under The Universe in Your Hands sign behind the Whirling Worlds station.
- DO** Have the students follow the instructions in the cards located to the right of the sphere to learn how to use an armillary sphere. Locate other armillary spheres in the exhibit and compare and contrast them.
- ASK** What do the parts of an armillary sphere represent? **Different latitudes, longitudes, and the ecliptic.** What is in the center? **Earth.** Why do you think the Earth is in the center? **People used to think that the Earth was in the center of the Universe.** How do you think this tool is still useful even though we know that the Earth is not in the center? **It helps people visualize or understand the movement of the stars and the Sun from our perspective here on Earth.** Why might people have used armillary spheres in the past? **As a tool used in observing the sky, and as a teaching tool in the classroom.**
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- FIND** Instruct students to locate the Cultural Astronomy Maps Interactive at the end of the exhibit.
- DO** Have the students use the interactive to learn about two or three of the five locations suggested.
- ASK** What was similar or different about the ways each of these cultures started exploring the world around them? What significance did the stars have for each of these cultures? Why is it important to learn about other cultures and their traditions?
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