



Lesson Title: Design Your Own Mission Patch

Subject	Grade Level	Timeline
History of Spaceflight and the International Space Station	5 - 8	30 - 50 minutes

Objectives

This lesson investigates the history of the mission patches worn by astronauts on the International Space Station (ISS), and previous NASA missions. In the accompanying video, astronaut Randy “Komrade” Bresnik explains that each crew designs its own mission patch to reflect the personality of the crew and the nations they represent. The mission patches also contain visual elements related to the mission itself.

In this lesson, students will gain an understanding of what mission patches are and how they are created. Students will employ teamwork to create and share their own mission patches.

Standards

National Core Arts Standards - Visual Arts

VA:Cr1.2.4a: Collaboratively set goals and create artwork that is meaningful and has purpose to the makers.

VA:Cn10.1.2a: Create works of art about events in home, school, or community life.

VA:Cn10.1.4a: Create works of art that reflect community cultural traditions.

Common Core State Standards Connections:

ELA/Literacy –

WHST.9-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. (HS-PS2-6)

Materials

- Mission patch worksheet (or large blank paper)
- Pencils, colored pencils, markers, etc.





Lesson Plan

If you have ever seen an astronaut's blue flight suit (like the one Randy "Komrade" Bresnik wears in the *ISS Science* videos) you've probably noticed the many patches on it. Depending on where the astronaut is from, he or she will either wear the logo of NASA, the ESA, or Roscosmos on the right breast. The national flag of the astronaut's home country goes on the left shoulder. On the astronaut's left breast is a patch with his or her name, sometimes accompanied by a patch telling how many days that astronaut has been in space.

On the front of the suit on either side are the astronaut's mission patches. For every space flight, the astronaut crew designs its own official mission patch. The patch design includes the mission number, the vehicle they travel in, and names of the crew. There are also unique visual elements on each patch that relate to different tasks the crewmembers will perform, or something that makes their mission different from others.

As a class, look through the patches that have been used on previous space missions - the websites are listed in the "Resources" section below. Find some that are interesting to you. Find some that are visually striking. Do any inspire you?

Student Activity

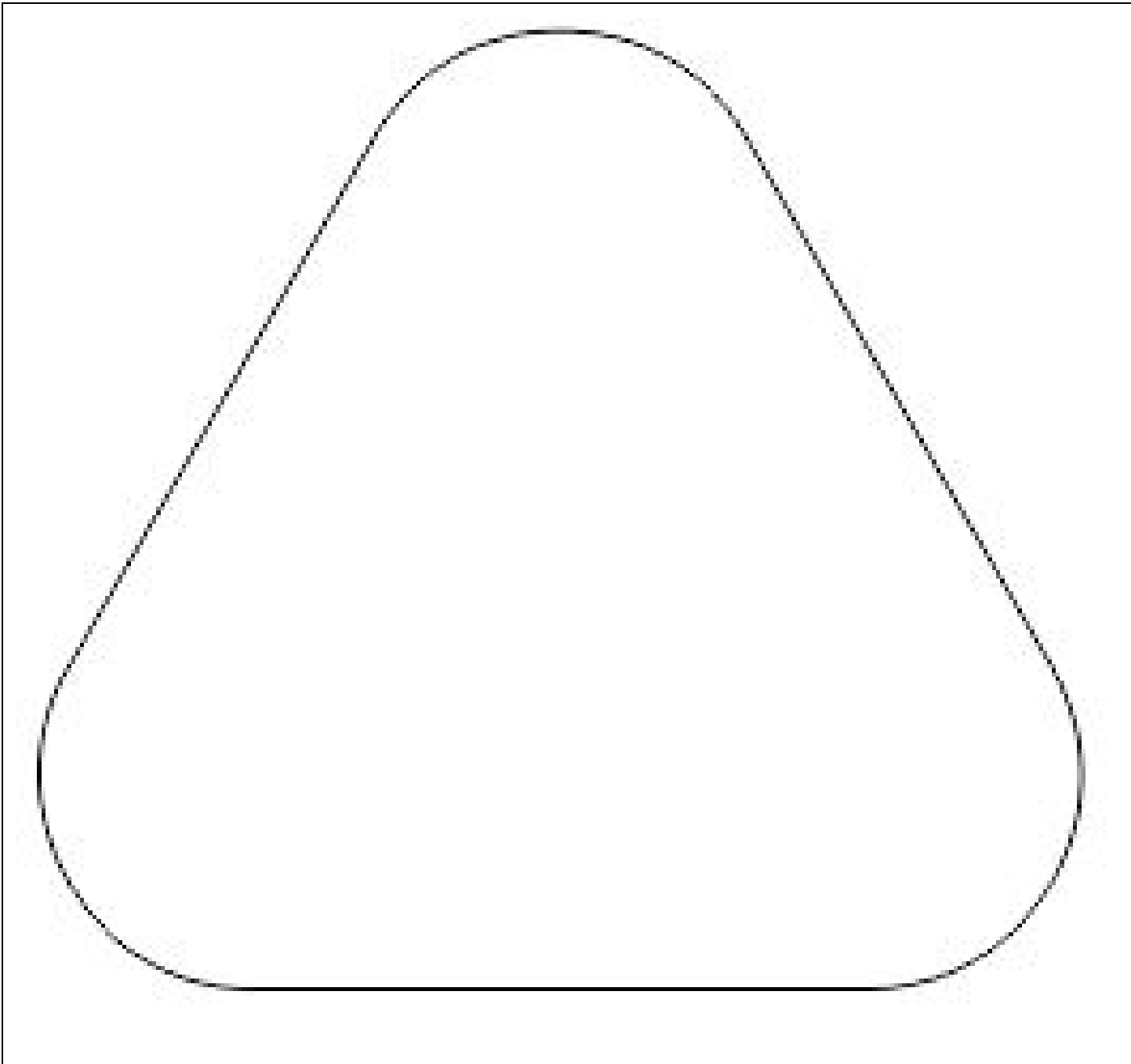
- 1) Students will work in groups of three--just like astronauts--to design mission patches, inspired by the patches worn on actual space flights. Choose a mission goal that would be in line with the real missions of NASA and the ISS. Work together to come up with a design that includes your names and some appropriate imagery. Color your team's patch and share the completed design with the class and your instructor.

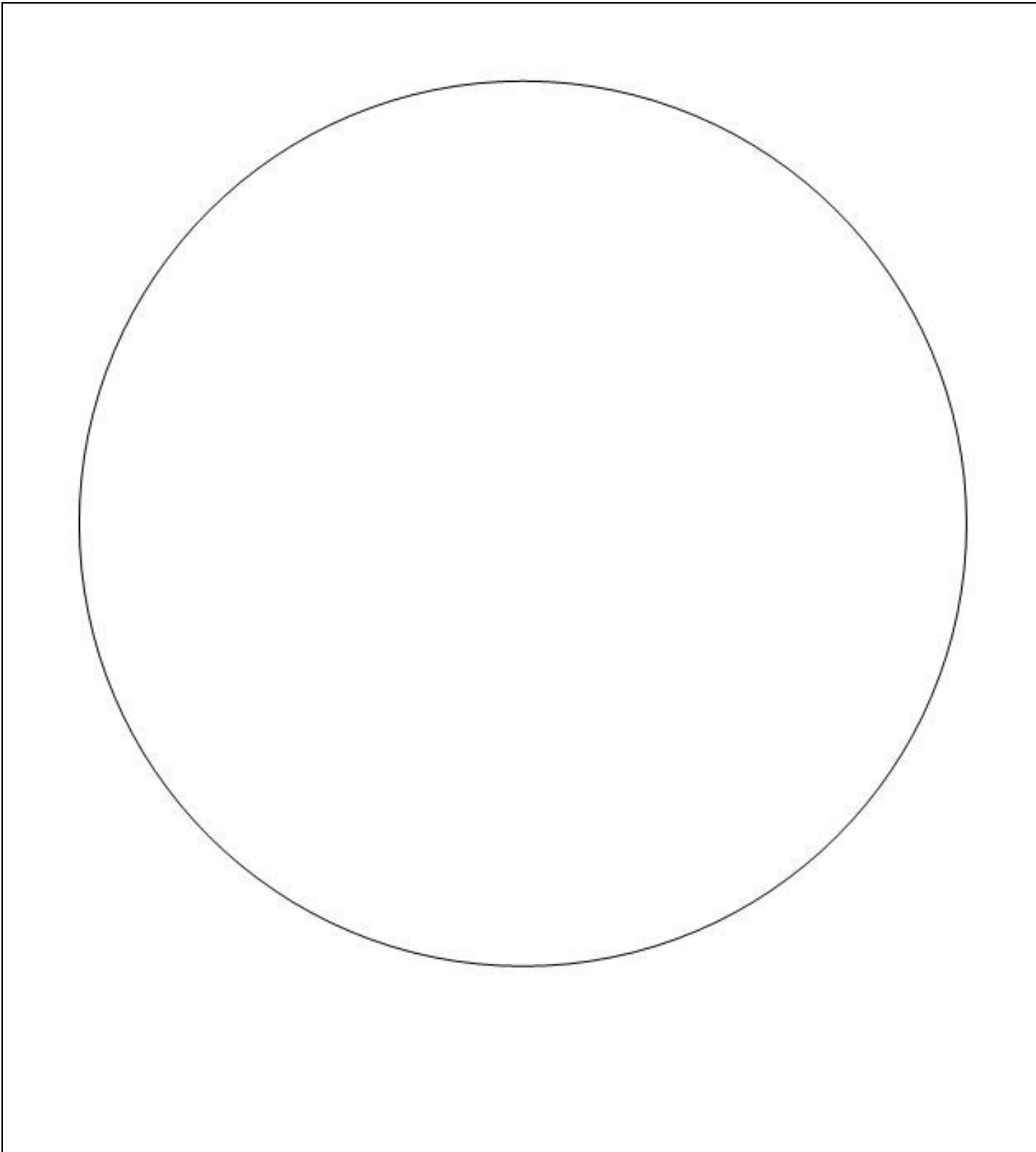
The pages below have suggested blank patch shapes to work on. Actual mission patches are 3-4 inches across, and come in a wide variety of irregular shapes. These are just a starting point!

- 2) Work together to create a mission patch that represents the entire class. What is the mission of this class? Be sure to include your room number, your teacher's name, the class period, and the subject into the design. What unique visual elements can go on the patch? What is something that makes your class mission different from others?

Work together as a team to design your class mission patch, and share it proudly as a symbol of your time together.









Extensions

Share the Mission Patch with STEM in 30 team!

As Beth said at the end of the video, you can share your class's Mission Patches via Twitter (<https://twitter.com/STEMin30>) or Facebook (<https://www.facebook.com/STEMin30/>) so the team can see what your class has come up with!

Resources

NASA: Mission Patches

See all of the mission patches from the following NASA programs: Mercury, Gemini, Apollo, Skylab, https://history.nasa.gov/mission_patches.html

AB-Emblem: ISS mission patches can be found under "Expedition".

<https://www.abemblem.com/serves/astronauts/>

ESA: Mission Patches

http://www.esa.int/About_Us/Welcome_to_ESA/ESA_history/European_manned_spaceflight_patches

Roscosmos: Mission Patches

<http://www.spacepatches.nl/>

Amateur Radio on the ISS (ARISS) - Using a current photo of the current ISS crew, look for their patches. Can you see the flags? The NASA logo, or ESA, or Roscosmos? The mission patches?

<http://www.ariss.org/current-iss-crew.html>

NASA: official Flickr photo sharing site

<https://www.flickr.com/photos/nasa2explore/>

