

**ACTIVITY 3.1  
 YOUR NEW HOME**

*From Chapter 3 of the Principia Space Diary*

<http://principiaspacediary.org/activities/your-new-home>

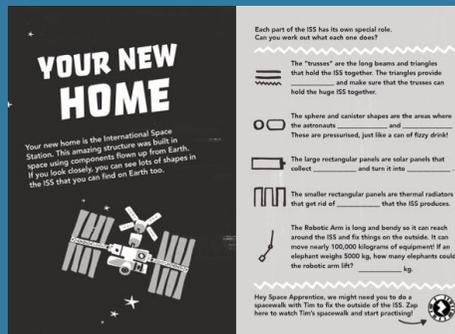
**LEARNING LEVEL**

*Foundation phase (FP), KS1, KS2, P1-5*

**CURRICULUM LINKS &  
 DIFFERENTIATION IDEAS**

View detailed curriculum links for England, Scotland, Northern Ireland and Wales, plus differentiation ideas for your region and year level.

[principiaspacediary.org/curriculum-planner/](http://principiaspacediary.org/curriculum-planner/)



**Resources Required**

- Craft materials or tools like Lego (optional)

**Background to this Activity**

The International Space Station is arguably the greatest international project of all time – to date, anyway! It is a partnership between Europe, Canada, Japan, Russia and the United States. Construction began in 1998 with the launch of Russia’s Zarya module. The last major part of the ISS – the particle physics detector Alpha Magnetic Spectrometer or AMS-02 – was delivered by space shuttle in May 2011.

The ISS weighs 360-tonne and has more than 820 cubic metres of space, pressurised so humans can live there. It is approximately the size of a football pitch, which is enough room for a six-person crew to live, to work on their experiments and to house all the equipment they need to survive in space and to maintain the ISS itself.

It would be impossible to build the ISS on Earth – there wouldn’t be a rocket big enough or powerful enough to launch it into space – so it was built piece by piece up there in space. It has taken more than 40 missions to space to deliver all the pieces needed to build the ISS.

**Running the Activity**

The ISS is an extremely complex structure and at first glance it can be intimidating. This activity simplifies the design of the ISS by getting students to focus on the different shapes within it, and looking at what those shapes do. They will reinforce this in the next activity in this chapter - Draw Your Own ISS (Activity 3.2). Before reading this activity with the class, encourage children to discuss and problem-solve what each of the ISS components might be. You can read more about the ISS here: [http://www.esa.int/Our\\_Activities/Human\\_Spaceflight/International\\_Space\\_Station/About\\_the\\_International\\_Space\\_Station](http://www.esa.int/Our_Activities/Human_Spaceflight/International_Space_Station/About_the_International_Space_Station)

**Answers**

- The triangles provide support/stiffness/strength and make sure that the trusses can hold the huge ISS together.
- The sphere and canister shapes are the areas where the astronauts live and work.
- The large rectangular panels are solar panels that collect sunlight and turn it into energy/electricity.
- The smaller rectangular panels are thermal radiators that get rid of heat that the ISS produces.
- The robotic arm could lift 20 elephants.

**Questions for the Class**

- What would you like/dislike about living on the ISS? Why?
- Why do you think the ISS looks so different to any building on earth? How is it different to your house or school?

**Extensions & Digital Resources**

**ZAP!** Use the Zappar app to watch Tim Peake training for his spacewalk when he was on Earth and to see highlights from his real spacewalk outside the ISS. See Zappar instructions at the link below and note that the mobile/tablet will need to be connected to the internet: <http://principiaspacediary.org/using-zap-codes-to-strengthen-digital-literacy/>