Royal Astronomical Society Young Astronomers Resources

The Royal Astronomical Society encourages and promotes the study of astronomy, solar-system science, geophysics and closely related branches of science. This resource pack includes websites, documents and activities to help young astronomers and leaders of science clubs and extra-curricular groups to gain experience and knowledge of aspects of astronomy, astronautics, and solar system science. The below table give an outline of the resources in the pack, and useful websites and activities to support leaders in the teaching of some astronomical concepts and practical activities.

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| **Activity** | **Helpful Website** | **Useful Files** |
| Observing the Night Sky – What patterns can we see in the Night Sky and why do they change night to night. | <https://www.bbc.co.uk/education/clips/z6vfb9q>  This is a nice simple BBC video to explain the seasons.  <https://www.google.com/sky/> | **The\_Night\_Sky.pptx**  A power point presentation with information on the constellations and why we can see different patterns in the stars on different nights.  **BBC\_sgl\_eventpack\_with\_links2013.pdf**  Constellation viewer (pages 4&5) |
| Learn some astronomical terms – A list of terms and their definitions. Card sorts and taboo are always good games to help children to learn these new terms. |  | **Astronomical\_terminology.docx**  A list of terms and definitions of some important astronomical terms. |
| Model the solar system – use fruit, playdough, and toilet roll to model the relative sizes, masses and distances to the planets in our Solar System.  These can all be used in conjunction to get a good idea of the scale of the whole Solar System. | [**https://solarsystem.nasa.gov/educ/play\_doh\_planets**](https://solarsystem.nasa.gov/educ/play_doh_planets) | **the planets.pptx**  planet facts and figures  **Solar\_System\_play-doh.docx**  Build a to scale solar system, representing the mass of each planet, using play-doh  **toiletpaper\_solarsystem**  Learn how far apart the planets are using a toilet paper scale model  **Fruit Solar System.docx**  Learn how big the planets are, relative to each  other  **Solar-System\_Facts.docx**  Learn some important fact about each planet in the solar system  **BBC\_sgl\_eventpack\_with\_links2013.pdf**  Loo roll/fruit solar system (page 6) |
| The Moon’s phases and its effects on the tides – Use the power point presentation and videos and demos included to explain why the moon goes through different phases during the month, and how it controls the tides on Earth. | <https://www.youtube.com/watch?v=wz01pTvuMa0>  this video shows how to demonstrate the phases of the moon using a lamp, a foam ball, a pencil and a darkened room.  <https://www.youtube.com/watch?v=4UZxzyOVJ8Q>  Brian Cox explains the tides | **Sun\_moon\_earth\_tides\_seasons.pptx**  A power point presentation explaining the tides, seasons and the phases of the Moon. |
| How to Build a telescope | <https://m.wikihow.com/Make-a-Telescope>  Use this wikihow page to make a telescope using 2 different magnifying glasses, corrugated card scissors and tape. | **BBC\_sgl\_eventpack\_with\_links2013.pdf**  Make your own refractor (page 11) |
| How to read a star map. Use this website to try to read a star map, and apps such as google sky maps for anyone with a smart phone or a tablet. | <http://www.popastro.com/youngstargazers/skyguide/>  <https://www.google.com/sky/> |  |
| Learn about Satellites and identify them in the night sky. Use the website to find the location of the international space station (and other satellites), and when it would be best to look for it in the night sky. | <http://www.heavens-above.com/> | **PrimEduKit\_ISS.pdf**  A full set of activities created by the European Space Agency(ESA), including making models of the Solar System and the International Space Station (ISS), help in observing the ISS, creating menus for the astronauts, information of how we get things there and back and the importance of international collaboration. |
| Build your own rocket!!  Make paper space crafts, space shuttles, and a plastic bottle launcher to launch them!! Teacher and students’ sheets are included in the files. |  | **Up\_up\_up\_pupil\_activities.pdf**  **Up\_up\_up\_teacher\_guide.pdf**  A set of activities that guide leaders and students to design and build their own mini working rockets! |
| How are craters formed? Use some flour, cocoa powder, sand, and ever glitter to create your own craters, just like those on the Moon! |  | **Tell-tale\_signs\_of\_a\_shooting\_star-teacher\_guide\_and\_pupil\_activties.pdf**  What I a shooting star and how do these form craters?  **Creating\_A\_Crater.docx**  Specific instructions on creating your own craters  **BBC\_sgl\_eventpack\_with\_links2013.pdf**  Martian Craters (page 12) |
| Could there be life somewhere else in the Universe? Water is necessary for any living organism to survive and so a search for water is key when looking for life. | <https://spaceplace.nasa.gov/i-see-ice/en/> | **Mars\_Earth\_craters\_streams.pdf**  Could there have been water on Mars?  How is Mars similar to the Earth? Do they have similar Geological features? This file includes information and activities to see how such similar features may have been formed, and satellite images to allow direct comparison of Earth and Mars. |
| What features exist on the Sun? Use these labeled and unlabeled colouring sheets to learn about the structure of our Sun. Make your own Solar Viewer and Spectroscope! |  | **suncore\_colour\_and\_label.pdf**  **sgl\_eventpack\_with\_links2013.pdf**  Solar Viewer and Make a spectroscope (Pages 7&8) |

**Other Useful Websites**

<http://www.esa.int/Education/Teachers_Corner>

[http://www.bbc.co.uk/stargazing](http://www.bbc.co.uk/programmes/b019h4g8)

<https://www.nasa.gov/centers/jpl/education/index.html>