Home Activities

1. Find the NASA Kids' Club website
There is a lot of cool stuff there including some games. Get exploring.

2. The Hubble Space Telescope
Find the official NASA website for the Hubble telescope. What different objects has Hubble looked at over the years? Which is your favourite picture?

3. Astronomy Picture of the Day
http://apod.nasa.gov/apod/
This site gives an astronomy picture with explanation every single day. What is today's?
http://apod.nasa.gov/apod/lib/aptree.html
We saw some of Galileo's skecthes of the moons of Jupiter. How do the pictures here compare? Why are they so different from Galileo's?

4. International Year of Astronomy 2009
2009 is the International Year of Astronomy. Lots of things are happening to mark this, see:
http://www.astronomy2009.org/

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THE UNIVERSE YOURS TO DISCOVER
INTERNATIONAL YEAR OF ASTRONOMY 2009

Telescopes Part 1

Student Workbook

Name _____

1: Lenses

1. Write your name on the "Never Point This Telescope at the Sun" Sticker. You must **NEVER** look at the sun through a telescope because you will permanently damage your eyes if you do. Stick both stickers on the outer cardboard tube.

2. Look through your lens at the writing on this page.

What do you see?

_____

_____

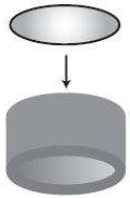
3. Carefully place the lens on a piece of paper on the table. Does it rock when you touch the edge? Turn it over and try again. The lens you have is called the objective lens,

Sketch a flat view and an exaggerated side view below.

Lens	Flat view	Side view	Focal length
Objective			

Is your lens concave or convex? _____

4. Holding your lens carefully by the edges place it with the curved side down in the red cap. Remove the foam lens holder from inside the cardboard tube and keep it safe for later. Put the red cap over one end of the outer cardboard tube. The curved side of the lens should point outwards.



Take a tissue and place it over the other end of the inner cardboard tube. Point the telescope at a lamp as far away as possible, and adjust the length of the telescope until you get an image of the lamp in focus on the tissue.

Measure the distance between the lens and the image. This is the focal length of the lens, enter it above.

Name as many objects as you can that contain at least one lens?

_____

_____

Home Activities

1. Observing the Moon

Your telescope should give you a really good look at the Moon. On a clear night use your telescope to make sketches of some of the features on the surface of the Moon. Can you explain why the surface of the Moon look like it does?

2. International Year of Astronomy 2009

This telescope kit was given to you to mark the 400th anniversary of Galileo's observations and the birth of modern astronomy. There will be national and international events throughout the year. See:

http://www.astronomy2009.co.uk

3. Project Sponsors

Two organisations sponsored this project, their logos are on the front page of the workbook. Can you find their websites? What are they and what do they each do?

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INTERNATIONAL YEAR OF ASTRONOMY 2009

Telescopes-part 2

Student Workbook

Name _____

2: Making your Telescope

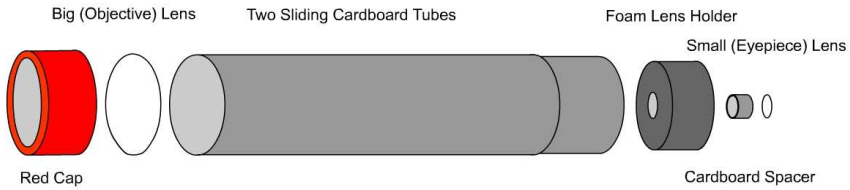
Your teacher should now give you the rest of your telescope kit.

1. The small lens is called the eyepiece lens,

Sketch a flat view and an exaggerated side view below.

Lens	Flat view	Side view	Focal length
Eyepiece			3cm

2. Complete your telescope by following these steps



a) Place the foam lens holder on the table
b) Push the cardboard spacer into the foam holder so that it goes all the way to the bottom
c) Push the eyepiece lens, curved side up, in with a tissue until it touches the cardboard spacer
d) Push the smaller end of the sliding tubes over the foam eyepiece holder

3. Test your telescope

Put your elbows on a stable surface, e.g. a table, and look through the eyepiece.

Slowly slide the tubes in or out until you see a good image.

What do you notice about the image?

Aim your telescope at a poster about 20 feet away

Can you read what it says?

Remember, you must **NEVER** look at the sun through a telescope. Use your telescope to look at distant objects through the window, and objects within the classroom.

How do you need to adjust the telescope to see in focus?

What does the adjustment depend on?

4. If you have time, decorate your telescope