

# Mercury Mercury is very dry and hot. During the day, it can get much hotter than the highest setting on your oven at home!

# Mars is a dry, rocky planet. It is sometimes called the "Red Planet" because it looks red. The red color is from dust on the surface. Uranus is very cold the Earth, it is made of gas, so there is no

Mars

Jupiter Jupiter is the biggest planet in our solar system. You wouldn't want to visit Jupiter though, because it is a giant ball of poisonous gas.

# Venus

just like Mercury. It is the second brightest celestial object in our night sky—only the Earth's Moon is brighter.

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# Earth The Earth, our home, is the only planet in our solar system where life exists. Unlike the rest of the planets, Earth has air we can breathe and water we can drink

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Uranus

and windy. Unlike

solid ground to land

a spaceship on.

IN THEATERS 10-23-09

# Neptune

Neptune is the coldest, windiest planet in our solar system. Brr! It has 13 moons to keep it company.

> Saturn Saturn is a big planet surrounded by beautiful rings made of ice and rock. It is often called the • "Jewel of the Solar System."



# **TEACHER'S GUIDE**

#### Introduction

This program, inspired by Astro Boy, uses science, history and art projects to bring together lessons about our solar system, Earth, and how the students can make the planet and their community a better place to live.

# Activity sheets for each of the suggested lessons can be found online at

# www.planetnewsandviews.com/teachers.html

# **1. Learn About Our Planets**

Earth is just a small part of a larger solar system and has a special place within the universe. Use the poster to lead a discussion on our solar system, discussing the eight planets and the Sun, and why Earth is the only planet that humans can live on.

- **a.** Discuss the characteristics of each planet with students. (i.e. there is no atmosphere on other planets, humans need oxygen which can only be found on Earth, the moon has no gravity, etc.)
- **b.** Hand out activity sheet with planets. Materials: Pencil, crayons/colored pencils. Have children color in the planets and write one word under each planet that describes it (i.e. Saturn has rings, Mars is red.)

# 2. Build an Astro Boy Solar System Mobile

The class will create mobiles that show the correct placement of each planet in order by its distance from the Sun.

Materials needed: Scissors, string, coat hangers, and crayons/colored pencils.

- **a.** Students color the elements on the activity sheets provided, including the planets, Sun, and Astro Boy.
- **b.** Students cut out objects on sheets that will be used to make the mobile.
- **c.** Students then write the name of each planet and character on the cut out elements.
- **d.** Students tie Astro Boy character and planets with string and fasten them to the coat hangers.
- e. Students can take their mobile home to share with family.

# 3. Astro Boy Vocabulary

Students will match up definitions with words on the activity sheets provided online.

- action
- adventure
- flight

- powerful
- robot
- rocket
- science
- technology
- unique
- x-ray

# 4. What it Takes to be a Hero

Teacher and students talk about heroes and how someone becomes a hero. Teachers can have pictures of heroes to refer to (i.e. Mahatma Gandhi, Martin Luther King, Susan B. Anthony, Rosa Parks, Abraham Lincoln, Nelson Mandela, and Neil Armstrong, etc.)

Materials needed: Paper and crayons/colored pencils

# **Topics for Discussion:**

- What is a hero?
- What positive qualities do heroes possess?
- For example: Astro Boy is a hero because he is selfless. He thinks of others and always tries to do the right thing. Astro Boy uses his powers to help other people and save Metro City.
- Discuss national heroes.
- What has each hero done and how does it make them a hero?
- Children should discuss community or personal heroes (i.e. policemen, firefighters, educators, neighbors, family members.)
- Students can discuss, "What makes them a hero to me?"
- "What do you do that makes you a hero?"

At home, students and family members pick out or draw a picture of their hero to discuss in class.

The next day students show the picture and discuss in class why that person is a hero to them.

# 5. Build Your Own "Go Green" Robot

Teacher provides a list of recyclable materials. Children bring in whatever they can from home, supplemented by teacher's materials. Students build and decorate their own robot. Teacher should encourage students to be creative with any recyclable materials they can bring from home.

# Sample List:

- paper towel and toilet paper rolls/tubes
- cereal boxes
- paper bags
- soup cans and cartons

- bottle caps
- paper plates
- plastic spoons and forks
- string
- rubber bands
- soda cans
- water bottles

Other materials needed: Scissors, crayons/colored pencils, glue and tape.

Teacher demonstrates how children can build a robot from these materials and shows a picture as an example. Sample photos are provided on the activity sheets online.

For example: Soup cans, paper towel tubes, plastic spoons and forks can be used for the arms and legs. A paper plate or cup can be used for the head. Students can also cut up a cardboard carton for each part of the body. Hair can be made from rubber bands or string and eyes are represented by bottle caps or buttons.

# Teacher may supplement this activity by explaining the big picture:

• It is important for us to find ways to reuse and recycle the items we use every day. Items such as the ones we used in our robots can be used again in school projects, at home, and with your friends. By recycling and reusing materials, we are helping to conserve our valuable resources and make a better world for everyone.

# Teacher to discuss the following:

- **a.** Where does pollution come from and what is it doing to our planet?
- **b.** What are the benefits of recycling?
- c. What are alternative energy sources and why do we need to use them?
- **d**. What can each one of us do in our communities to "Go Green" and help save the planet?

# Back to School Night Integration:

Teachers are encouraged to showcase this lesson and the students' robots at Back to School Night to show parents that their children are being educated about the issues facing our planet today and in the future.



# 6. Superpowers: Class Discussion

Special powers only become "super" when they are used to help others. Astro Boy uses his powers to help Metro City. Teachers lead the students in a discussion of how they can use their personal powers to help others.

#### Astro Boy possesses these superpowers:

**1.** X-ray vision.

- **2.** The ability to fly using rocket boots.
- 3. Arms that transform into cannons.
- 4. Ability to speak and hear "robot" language.
- 5. A blue core self-sustaining power source, stronger than nuclear energy and infinitely cleaner. It's pure positive energy.
- 6. Threat Analysis H.U.D.(Heads Up Display): Astro Boy can view and assess the danger level of a threat at great distances.
- If you could have one superpower what would it be?
- Write down your one superpower.
- Tell us why you picked it.
- How would you help others with your special power?

How would you use your superpower to save the world?

#### Teachers may end the lesson with this message:

• Even though we may not have superpowers, we all still have great powers inside of us. We have the power to help others less fortunate than ourselves, to help people in need, and to make the world a better place for everyone. We all just need to take steps to help our planet flourish, like Astro Boy does.

