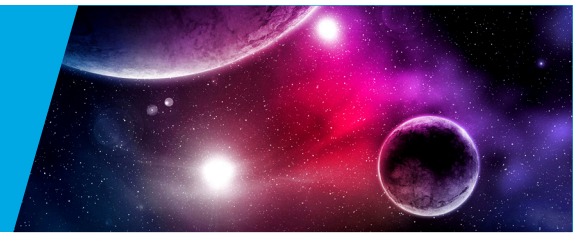


# CURIOSITY AT HOME

## EXTRATERRESTRIAL ADVENTURE



*If we met an extraterrestrial, a life-form from another planet, what would it look like? Books and movies have imagined extraterrestrials that look like octopuses, giant insects, or even teddy bears! These imaginary extraterrestrials have bodies that are adapted to, and able to live in, their outer space home. Imagine an extraterrestrial that was from Mars; would it be orange, to blend in with the reddish-orange dust? Would it be taller than a human, because Mars has less gravity than Earth to pull it down?*

*Use your imagination to create an extraterrestrial of your own!*

### MATERIALS

- Paper or science notebook
- Pencil
- Research materials (access to the website [NASA.gov](https://www.nasa.gov) or a book on the planets)

### OPTIONAL MATERIALS (to make a 3-D extraterrestrial):

- Any craft materials and supplies (clay or play-doh, scissors, glue, pipe cleaners, feathers, corks, etc.)

### PROCEDURE

- Pick a planet from our solar system (not Earth). You can explore [solarsystem.nasa.gov](https://solarsystem.nasa.gov) to learn about planets in our solar system.
- Research your planet. Find information that could affect the way your extraterrestrial looks, and write it down in your Science Notebook. **You may want to consider:**
  - The planet's surface: How will that affect the way your extraterrestrial moves or where it lives?
  - Possible food sources: What is it going to eat?
  - The atmosphere: Is there air? Will your alien be underwater or in thick clouds? How will it breathe?
  - The temperature: Is the planet warm or cold? Does the temperature change during the day? Are there seasons?
  - The planet's size: Is it bigger or smaller than Earth? How will the gravitational pull affect the extraterrestrial's body structure?
- Create your extraterrestrial by drawing or constructing a 3-D model. Think about what it would need to survive on the planet. How will it move, eat, breathe, maintain its body temperature, and communicate with other living things?
- Write a description of your extraterrestrial that explains how the different parts of its body help it to survive on its planet.



feathers



corks



clay/play-doh



tissue paper



sequins



leaves, stones

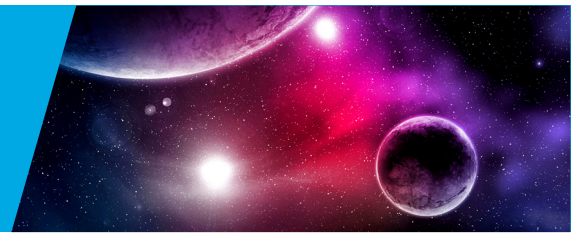
*Experiment continued on next page...*



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# CURIOSITY AT HOME

## EXTRATERRESTRIAL ADVENTURE



### EXPLORE MORE

Play a guessing game! Show your finished extraterrestrial to a family member or friend. Read your description of the extraterrestrial WITHOUT revealing the name of the planet it is from. See if they can guess which planet your extraterrestrial lives on!

### DID YOU KNOW

Thousands of planets outside our own solar system have been discovered, and there are likely thousands more yet to be found. These planets are called *exoplanets*.

Scientists have found many planets and moons, but they've not yet found life beyond planet Earth. Scientists who search for signs of life throughout the universe are called astrobiologists. Often these searches take place in our own cosmic backyard, on planets like Mars and moons like Callisto, which orbits around Jupiter. Astrobiologists use special telescopes and cameras to search our solar system for gases and liquid water that give clues about life!



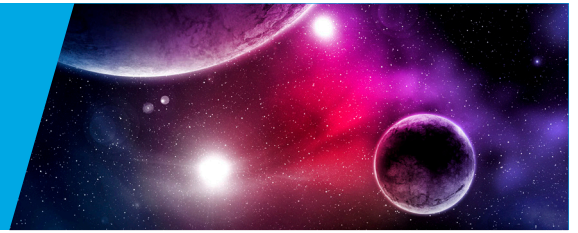
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# CURIOSITY AT HOME

## EXTRATERRESTRIAL ADVENTURE



### K-2 GRADE EXPLORATION

Here are some questions you can explore together.

- All living things need food to survive. What would your extraterrestrial eat? Add it to your drawing or model.
- All living things need shelter to survive. What kind of home would your extraterrestrial live in? Give your creation a home.
- Create an extraterrestrial pet; how is it different than animals on Earth?



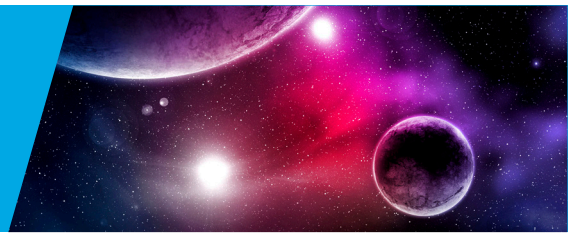
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# CURIOSITY AT HOME

## EXTRATERRESTRIAL ADVENTURE



### 3–5 GRADE EXPLORATION

Explore the following questions and write your observations in your science notebook.

- Find out where your planet is in the sky right now. If your planet is in the sky during the day, why can't you see it? If your planet is visible at night, go outside at night with a star map and try to find it. If your planet isn't visible at night, where in the world could you go to see it?
- Imagine that your extraterrestrial traveled to a different planet in the solar system. How long would it would take to travel there? Would it be able to survive on the other planet? If not, what would it need to help it survive? (Example: humans need a spacesuit to survive on the moon. Would your extraterrestrial need a special suit to survive the gravity, or a different way to breath on a new planet?)



Show us how you're being curious! Share your results with us.

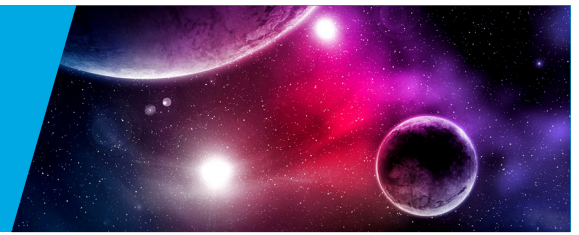
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# CURIOSITY AT HOME

## EXTRATERRESTRIAL ADVENTURE



### 6–8 GRADE EXPLORATION

Explore the following questions and write your observations in your science notebook

- Draw a map of what planets are visible after sunset in your notebook.
- Investigate where your planet is in the sky right now. If your planet is visible at night, go outside at night with a star map and try to find it. If your planet isn't visible at night, where in the world could you go to see it?
- Make stop motion movie. Become the next science fiction movie director and send your extraterrestrial on an adventure! Follow these steps to make a stop motion movie using your phone or camera:
  - Create a story board. On paper, draw or describe a simple action you want your extraterrestrial character to do in a series of frames that will tell a story. (20–30 photos recommended)
  - Create a backdrop for your movie. Is your extraterrestrial on the surface of Venus? In a space ship? Floating underwater? Draw or construct a simple backdrop.
  - Set up a photoshoot area. Put your backdrop on a desk or table top and shine a lamp on it. This will keep your lighting consistent from photo to photo.
  - Set up your phone or camera on a stand to keep it still as you photograph.
  - Take a photo of each storyboard frame, slightly moving your character from photo to photo. If you made a clay 3-D model, you can slightly bend the character to change its position from shot to shot. If you drew a paper character, you can cut it out; try erasing and redrawing to change its facial expressions!
  - Once you have all your photos, play in them in a slideshow to make a stop motion movie. Challenge your friends to make one as well!
  - Hint: use floss or clear tape if you want something to float or fly in your video. How else can you create illusions?



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