Spring Picnic Homeschool Lesson Plan

Raddish Lesson Plan Road Map

We design these lessons to be adaptable and flexible to your students and your life. You can do A Little Taste in ~45 minutes, or you can use the extension activities and make the projects and activities listed last over several lessons or even weeks. The lessons are meant to be interdisciplinary, covering many subject areas at once. Students of all ages can use these materials, with learners who are pre-writers able to draw or verbally share responses.

If desired, you could extend these lessons into a project-based learning unit of study, where students tackle a real world problem and create solutions. The learning happens in the process of getting to the presentation of the solution, and students often find it more meaningful when they are investigating a topic of their choice.

For a deeper look at the topic, A Big Bite offers extension ideas for learners who are able to read, write, and think on a higher level.

We always love to see your finished projects! You can share them in our Facebook group, The Raddish Table, or email us hello@raddishkids.com.

Driving Questions: What is an insect? What insects would be attracted to a picnic?

A Little Taste

Resource List

Background Information (also linked within lesson)

- *The Life and Times of the Ant*, picture book by Charles Micucci, https://bookshop.org/books/the-life-and-times-of-the-ant/9780618689491
- *The Life and Times of the Ant*, video read aloud by MrsMorrisReads, https://www.youtube.com/watch?v=ApXm7e3dZ3Y
- *I Didn't Know… That Some Bugs Glow in the Dark*, picture book by Claire Llewellyn, https://www.amazon.com/didnt-know-that-Some-Bugs/dp/0761305874
- Pest Quest, video from Pest World for Kids, https://www.pestworldforkids.org/pest-quest-season-1/
- Bugs Listed by State/Province, database of bugs, https://www.insectidentification.org/insects-by-state-listing.php
- How Do Ants Find Food?, video from Animal Science for Kids, https://www.youtube.com/watch?v=2lVb2Atu3Jc

Optional Extensions

- Drawing Circles Around Ants, project idea from Science Buddies, https://www.sciencebuddies.org/science-fair-projects/project-ideas/Zoo_p025/zoology/ant-repellent-chemicals?from=Blog#materials
- *Ultimate Bugopedia: the Most Complete Bug Reference Ever*, book by Nancy Honovich, https://bookshop.org/books/ultimate-bugopedia-the-most-complete-bug-reference-ever/9781426313769
- *Evelyn the Adventurous Entomologist*, picture book by Christine Evans, https://bookshop.org/books/evelyn-the-adventurous-entomologist-the-true-story-of-a-world-traveling-bug-hunter/9781943147663
- *Evelyn the Adventurous Entomologist*, video read aloud by Rosie Riveters, https://www.youtube.com/watch?v=sfvoWG9DiF0
- "What is an Entomologist?", article from Environmental Science, https://www.environmentalscience.org/career/entomologist
- "Here Foodie Foodie", Wow in the World podcast from NPR, https://www.npr.org/transcripts/695291352

- "The Ants Go Marching", music video with lyrics from Kids Academy, https://www.youtube.com/watch?v=eppcAo0ejPY
- A Remainder of One, picture book by Elinor Pinczes, https://bookshop.org/books/a-remainder-of-one/9780618250776

Conceptual Knowledge - What Do You Want Them to Know?

1. The types of insects that can be found outside your home vary depending on time of year and location.
2. Ants are insects that are found everywhere. They are especially attracted to spaces with people because they are omnivores.

Key Vocabulary

- Insect - a bug that has 3 separate body segments (head, thorax, and abdomen); they have 3 pairs of legs, antennae, and most adults have wings
- Thorax - the midsection of an insect body
- Omnivore - an animal that eats both plants and animals
- Ant Colony - the physical structure and social rules of the place where ants live
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Cross-Curricular Links

- Science, Math, Language Arts

Project Idea/Scenario

Students will create a science-informed project that showcases new knowledge about ants and insects.

Plan the Process: What Will the Students Do?

Students will learn about insects as a group and specifically the world of ants to inspire their own scientific discoveries.

Warm-up Activity - Activating Background Knowledge

- Ask learners to draw a picture of a bug. After a few minutes, compare pictures and drawings. Have students count how many legs they drew on their bugs and try to identify body parts.
  - Did they include antennae and 6 legs?
    - If the bug they drew has more than 6 legs, it is not an insect. (Spiders are arachnids and centipedes are arthropods.)
  - Might you find this bug on a spring picnic?
    - Discuss the insects that might be found at a picnic. For today, ants and their behavior will be the main focus of study.

Sequence/Procedure

1. Discuss what students already know about ants and what they hope to learn.
   - Consider: Where do they live? What do they eat? How long do they live? Where can they be found around the world?
2. Read or watch read-aloud of *The Life and Times of the Ant*.
   - Be on the lookout for answers to the questions about ant habitats. Listen to learn about the ant's body and different roles different ants serve in the colony.
3. Watch video about picnic pests. Ants at a picnic are considered a pest, but what other creatures are drawn to a picnic?
   - What steps can you take to keep all pests away from your picnic? What foods do you think are the best picnic foods if you are trying to keep ants away?
4. Watch video about how ants find food.
   - Test your own sense of smell: go to a wide open space and tie on a blindfold. Have someone set out a food with a strong scent, and then see if you are able to find the food even while blindfolded.
5. Look up your state or choose a region in North America. See what bugs you might expect to find on picnic using the insect identification database.
   - How many have you seen before? Count and total.
   - How many different types of ants can be found in your region?
6. Fill in the graphic organizer about ants and ant behavior on page 8 of the lesson plan.
   - In honor of April being National Poetry month, complete an acrostic poem on the handout, and fill in some facts about ants.
7. Choose a project from the possible creations list. Share your completed project (preferably outdoors) while enjoying any of the recipes from Spring Picnic.

Possible Creations

1. Using *Ultimate Bugopedia* book and the insect database for your region, create a bug catalog. Go into your backyard or to a park, and map the area you are going to survey. Write down your prediction of how many different bugs you expect to see, and how many total bugs you think you will see. Use a magnifying glass if you have one. Record and chart in a bar graph how many different bugs you find.
2. Conduct an ant attraction science experiment. Be sure to follow the scientific method. Record your predictions, observations, results, and conclusions.
3. Create a model of ant tunnels and the chambers that they use underground. In real life, ants use dirt, clay, or other natural materials, but you can use toilet paper tubes or other recycled materials to create the structure. If you were an ant, what elements would you want to include? Make sure to include a place for the queen and identify purposes of different rooms.

Extensions

1. In some parts of the world, certain insects are used as food. Listen to Wow in the World podcast episode about the reasons for eating insects. What Raddish recipes could you transform to include insects? Imagine that you are trying to market insects to kids you know. Rewrite and create a new Raddish kit that includes edible insects.
2. Read or listen to video read aloud of *Evelyn the Adventurous Entomologist* and check out the website with information about the education required to become one. For any kid interested in a career in bugs, what would they need to know? Map out a timeline of things to do in order to pursue this career.
3. Listen to the song "The Ants Go Marching." Draw and add up the total number of ants mentioned in the song. How many more verses of the song would need to be added to get to an ant colony of 1000 ants? Read through the book *A Remainder of One*, and see if you can figure out (before the end) the right number of bugs for each group so no one is left over. Find the difference between the number of ants in the song and the number of bugs in the book.

Driving Questions: What space mysteries are left to solve? What is the history of humans in space?

A Big Bite

Resources

- Science Never Stops, U.S. Space and Rocket Center, https://www.rocketcenter.com/scienceneverstops
- International Day of Human Space Flight, brief from the United Nations, https://www.un.org/en/observances/human-spaceflight-day
- U.S. Space and Rocket Center Virtual Tour, Joy of Museums, https://joyofmuseums.com/most-popular/air-and-space-museums/u-s-space-rocket-center/
- Calculating Your Weight on Pluto and Mars, video tutorial from U.S. Space and Rocket Center, https://www.youtube.com/watch?v=QUXK9m5IF2I&feature=youtu.be
- *Margaret and the Moon*, picture book by Dean Robbins, https://bookshop.org/books/margaret-and-the-moon/9780399551857
- *Mae Among the Stars*, picture book by Roda Ahmed, https://bookshop.org/books/mae-among-the-stars/9780062651730
- See the moon landing as they did 50 years ago, video from CNN, https://www.cnn.com/videos/us/2019/07/18/apollo-11-moon-landing-scn-orig.cnn/video/playlists/moon-space/
- NASA Mars Perseverance Landing and First Audio recording, NASA article, https://www.nasa.gov/press-release/nasa-s-mars-perseverance-rover-provides-front-row-seat-to-landing-first-audio
- "Mars rover beams back panoramic view of landing site", photo essay from CBS News, https://www.cbsnews.com/news/mars-landing-perseverance-rover-panoramic-photo/
- Astronaut Taste Buds, video from U.S. Space and Rocket Center, https://www.youtube.com/watch?v=zjAudBomh9o&feature=youtu.be
- Four Forces of Flight With Paper Airplanes, video from U.S. Space and Rocket Center, https://www.youtube.com/watch?v=m5y9QX_bjB4&feature=youtu.be
- What It's Like to Become a NASA Astronaut: 10 Surprising Facts, https://www.space.com/37110-becoming-a-nasa-astronaut-surprising-facts.html
- Astronaut Requirements, guide from NASA, https://www.nasa.gov/audience/forstudents/postsecondary/features/F_Astronaut_Requirements.html

Project Idea/Scenario

Students will learn the history of human space exploration and create a project that shows one aspect of the knowledge needed to get humans successfully into space.

Sequence/Procedure

1. What historical sites in the American South do you know about?
   - A specific point of pride is the U.S. Space and Rocket Center is in Huntsville, Alabama. The center was pivotal in the push to get American astronauts into space.
   - Visit the U.S. Space and Rocket Center website and check out the various exhibits and special features they offer.
   - Tour the Space and Rocket Center using virtual tour videos.
2. April 12th each year is the International Day of Human Space Flight, first designated by the UN in 2001. Read the short brief from the UN about its history, and consider:
   - What do you feel is the most important goal for mankind in space exploration?
   - What would you have included on the Golden Record, if given the chance to add a recording of your own?
3. Watch the Apollo 11 moon landing video and Mars Perseverance rover landing video.
   - What did we learn from the first man walking on the moon?
   - Why is Mars Perseverance there now? What do they hope to learn? Use panoramic photos to see recent images from Mars. What does the landscape look like to you?
4. Watch video from Space and Rocket Center to learn how to calculate your weight on Pluto and Mars.
5. Read *Margaret and the Moon* and *Mae Among the Stars*. What are the similarities and differences between Margaret and Mae?
   - Use information from the books and from video about calculating your weight on Mars and Pluto to fill out the handout on page 9 of the lesson plan.
6. Select a project to complete that illustrates your understanding of the intricacies of space travel and the work of all the different people involved who make this type of exploration possible.

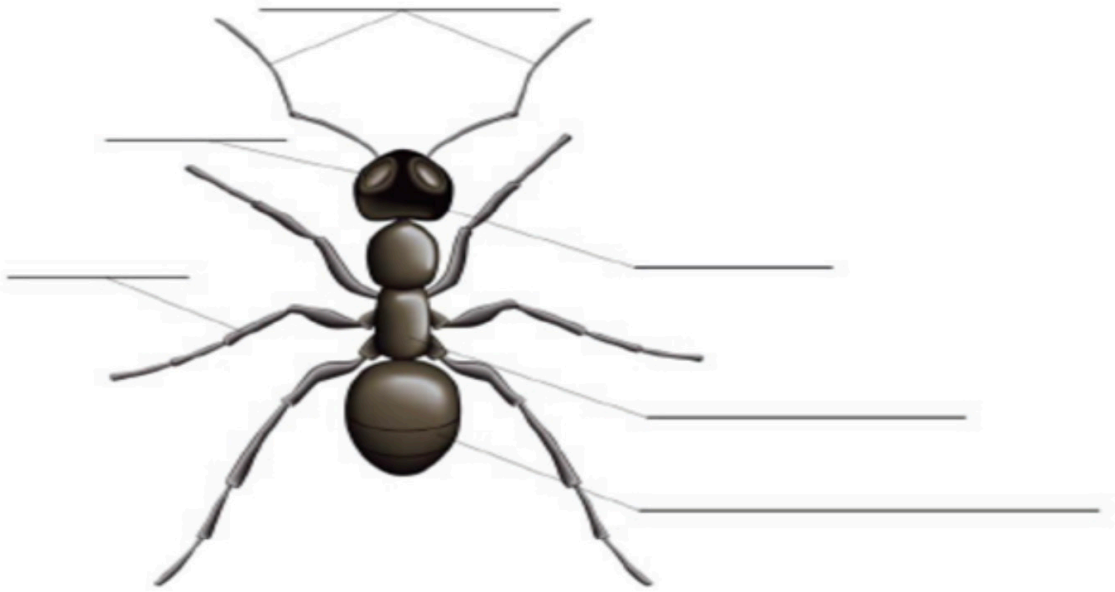
Possible Creations

1. Feeding astronauts is trickier than just keeping the food from moving around. Watch the video about taste buds and diet. Using your new knowledge, create a multi-day meal plan that would meet the unique needs of an astronaut. See if there are any Raddish recipes that could be used or modified slightly to include in an astronaut diet.
2. Use paper airplanes to understand the four forces of flight. After conducting the experiment, draw your ideal rocket shape to get into the sky and beyond, and explain why you would design your rocket to look this way based on your observations from the paper airplane experiment.
3. Read about the requirements to become an astronaut and some of the surprising things about being an astronaut. Create a slideshow on the necessary steps and information for anyone who is interested in this as a career.

Ants!

Identify and label the different body parts of an ant, using the word bank for help.

Thorax	Abdomen	Antennae
Legs	Eyes	Head



An acrostic poem is a poem where the first letter spells out a word or message. Complete your own here using ant facts to make an ant acrostic.

A_____

N_____

T_____

S_____

Space Travel Pioneers

Mae Jemison and Margaret Hamilton both had successful careers in the world of NASA and space travel. Fill out the chart below and see how their experiences were similar and different.

	Mae Jemison	Margaret Hamilton
What did she do?		
What did she study in order to get there?		
What mysteries of space did she explore?		
What barriers did she have to overcome to reach her goal?		
What is she doing today?		

What is your weight on Mars?

What is your weight on Pluto?

If you had the opportunity, would you travel to Mars? Why or why not?