

3: ENGINEER AN ARTHROPOD



Kit Materials

A

- [Engineer an Arthropod cards](#)
- [Engineer an Arthropod handouts](#)
- color construction paper
- [Taxonomy cards](#)
- tissue paper

B

- pipe cleaners (short only)
- cups

C

- tape
- scissors

Loose Items

- SAC notebooks

You provide

- recycled materials

Preparation

- Write the secret words on index cards.
- Collect recycled materials (cereal boxes, toilet paper rolls, bottles, etc.) beforehand.



Your mission today is to sort species scientifically and construct an anatomically correct arthropod.

Telephone Charades Race

10 min. | inside

Words will be acted out (like Charades) and passed from one person to the next (like Telephone). No sounds or lip-syncing allowed.

1. In teams of four to six, line up single file, facing backwards.
2. The first player in each line turns around to see the secret word, then taps the next player and acts it out. Once the second player figures out the word, he or she turns to tap the next player.
3. Continue until the last player figures out the word and calls it out. Play up to three rounds.

Secret words: butterfly, spider, mosquito, crab, grasshopper, dragonfly (or choose your own)

Sort it Out

20 min. | inside

Scientists organize living things based on similarities and differences. Practice this using the *Taxonomy* cards provided.

1. Divide into four teams, each with one set of cards.
2. Sort the animals on the cards according to any characteristics you like, except color or size.
3. When you finish, choose a new characteristic and sort again.
4. See how many different ways you can sort the animals in 15 minutes.

- Allow five minutes for first sort (into birds, mammals, and arthropods), and 10 minutes for second sort.
- Encourage youth to notice size, color, shape, and types of body parts.

Share out: What characteristics did you use to sort the animals? How did you handle any disagreements that came up within your team?

Shared characteristics present clues about how species are related. For example, any organism with an exoskeleton, segmented body, and jointed arms and legs is an **arthropod** (are-throw-pod). Arthropods, such as spiders, butterflies, scorpions, and crabs, make up 80% of all animals and 75% of all living things on our planet.

Engineer an Arthropod

30 min. | inside

Imagine you could engineer a brand-new arthropod. What would it look like? How would it survive in the wild?



1. Working independently or in pairs, select an *Engineer an Arthropod* card to determine your arthropod's environment and sources of food.
2. Use the *Engineer an Arthropod* handout to brainstorm ideas for how your arthropod might look. Each arthropod must have:
 - All three essential arthropod characteristics: an exoskeleton, a segmented body, and jointed arms and legs.
 - The right body parts to eat the food sources listed.
 - The right features to hunt or hide in the environment.
3. Use the materials available to construct your new arthropod.
4. Present your arthropod to the group. Describe the body parts and features that would help it survive in its environment.

- To help get started, practice with one *Engineer an Arthropod* card together as a club.
- Remember, arthropods are more than just insects. Check out the horseshoe crab photo on page 8.

 Explore more:
[Arthropod Music Video](#)



Explore more: Sing and dance to this [Arthropod Music Video](#).

Call to action: Notice features that make the organisms in your neighborhood similar to or different from each other. How many different ways could you sort these organisms?

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How did it go?
[Let us know!](#)



Attendance & feedback: How many youth attended? How did it go? Record notes here, then click or scan the link to let us know.

