

Fill The Bill

Background

This activity is aimed to introduce students to the ways in which scientists use modelling, data generation and citizen science to obtain knowledge. Students will learn about evolutionary adaptations by working individually and will use different tools to determine what bird beak type works best to pick up different types of bird “food”. Using Atlas of Living Australia, students will investigate the distribution of local bird species by becoming aware of the power of citizen science contribution to conservation.

Equipment and materials

- 6 eyedroppers or straws
- 3 envelopes or small fishnets
- 2 large scoops or slotted spoons
- A narrow vase filled with water
- Large container filled dry oatmeal (approximately 2 cups)
- 1/2 a cup of fake worms (lollies are probably easiest)
- 4 pairs of chopsticks or forceps
- 3 nutcrackers

- 2 strainers
- 1 cup of whole walnuts or other nuts
- 2 pairs of tongs
- 1 packet of dried macaroni
- 1 aquarium or big tub filled with water
- 1 packet/1 cup of puffed rice
- 1 cup of popped popcorn or small marshmallows
- 1 packet of rice
- 1 packet of cherries (approximately 8 cherries)
- 1 roll of string

Activity set up

1. There will be eight working stations for activity 1.
2. The table below is a guide on how to set up each working station.

Station	Tools	Set up
1	1 eyedropper or straw, 1 envelope or small fishnet, 1 large scoop or slotted spoon, 1 narrow vase.	Fill the vase with water. Place the other tools next to the vase.

2	1 large container, dry oatmeal, fake worms, 1 pair of chopsticks or forceps, 1 nutcracker, 1 strainer	Put the worms at the bottom of the container and then fill the container with the dry oatmeal. Place the other tools next to the container.
3	Whole walnuts or other nuts, 1 nutcracker or pliers, 1 pair of tongs, 1 pair of chopsticks	Place all items next to each other.
4	Dried macaroni, 1 aquarium, 1 large scoop or slotted spoon, 1 eyedropper or straw, 1 pair or chopsticks	Fill aquarium with water and place macaroni pieces in it. Place all other items next to aquarium.
5	Puffed rice, 1 aquarium, 1 strainer, 1 pair of forceps or tweezers, 1 pair of tongs	Fill the aquarium with water and place puffed rice in it. Place all other items next to aquarium.
6	Popped popcorn, 1 small fishnet, 1 pair of tweezers, 1 pair of chopsticks.	Place all items next to each other on a bench or table.
7	1/4 cup of rice, 1 pair of tweezers, 1 small fishnet, 1 nutcracker	Place rice in a line on bench (1 rice grain wide) with other tools placed beside it.
8	8 cherries, roll of string, 1 pair of tongs, 1 straw, 1 strainer	Tie each of the 8 cherries to a piece of string (approx 15cm long). Place other tools on bench.

Risk management

There are minimal risks in this activity.

Students must be educated prior to starting the activity on how to use equipment correctly.

Material sources

Most of the equipment used in this activity are common home-ware products so can be generally found in most homes and/or supermarkets.

For many of the tools required for this activity there are alternatives that can be used (eg. a clear bucket filled with water can replace the aquarium filled with water at station 5).

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