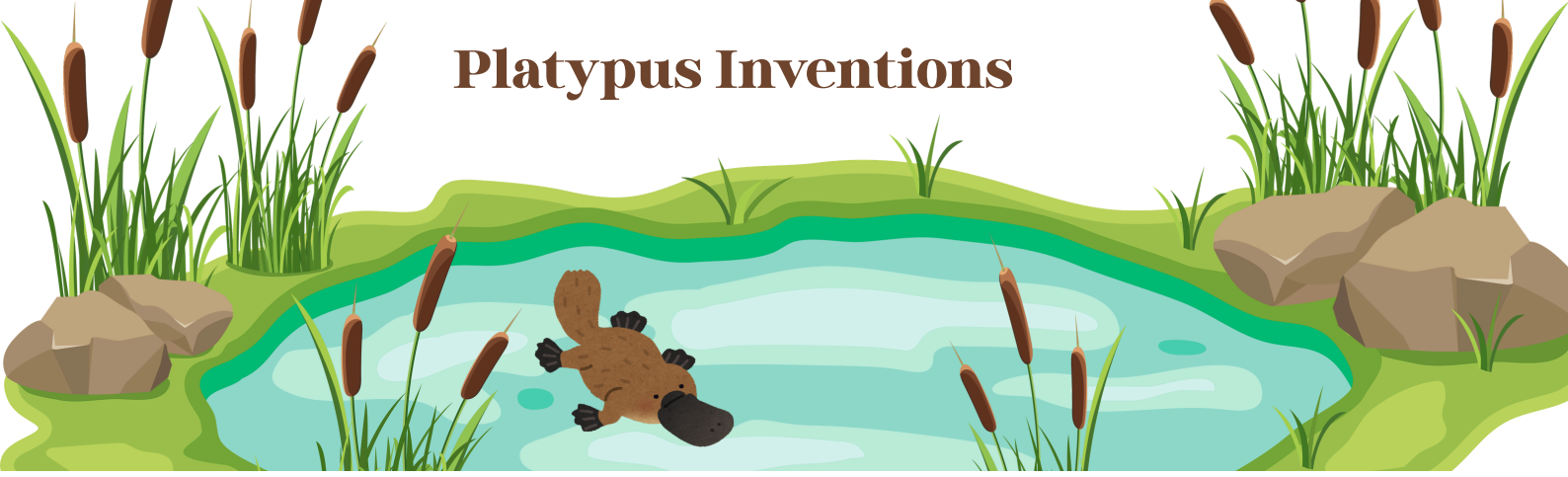


Platypus Inventions



Subject: Biomimicry

Grade Level: K-5

Topic: Animals and Inventions

Time: 60 minutes

Learning Objectives



Students will:

- study a unique animal.
- brainstorm different inventions that could be developed based on the animal's unique characteristics.






Materials

computer, book, "Platypus Probably", by Sneed Collard, III, construction paper, scissors, glue, wiggle eyes, *Parts of a Platypus Worksheet*, stuffed platypus

Procedure

Engage: To promote student curiosity, Ask: *Have you ever seen a platypus? What do they look like?* Show students this video:  [A Little Bit About Platypus](#) Share fun facts from this site:  [Duck-Billed Platypus](#)

Explore: Help students build an understanding by reading "[Platypus Probably](#)". Do an age-appropriate anatomy lesson about the platypus using the *Parts of a Platypus* worksheet. Look at form and function of a platypus and talk about its habitat. Ask: *How does the shape of its parts help it survive? How are do its parts help it live in its habitat?* Have a stuffed platypus available for students to get an up-close look. Do a compare/contrast with other animals like a duck, beaver, or otter. Share some examples of biomimicry so students build that into their understanding. This video is age appropriate.

   "What is Biomimicry? - Nature's Ingenious Solutions Explored!"  

Explain: Have students begin to show what they have learned by having students create a paper sculpture of a platypus or a book mark <https://www.bakerross.co.uk/craft-ideas/kids/duck-bill-platypus-bookmark/>. If you are going to do paper sculptures, be sure to display a picture of a platypus for students to use as a model. Next, divide students into groups of 3 or 4. Have the groups list and describe the unique features of a platypus. Have students examine their sculptures to see if they have included included parts like claws, flat tail and bill.

Elaborate: Have students use their new knowledge by having students think about the unique features of a platypus. Talk about what inventions could have come from those features.

Assessment

Evaluate: Evaluate student learning by having each student share their sculpture or book mark. Have a class discussion about what they have learned.

Extension Activities

- Make a mobile where you add the paper sculpture or book mark of the platypus and at least 2 inventions that might have come or could be based on the features of the platypus. Students can print or draw these.
- Make models of the inventions using recycled material like yogurt cups, egg cartons, paper towel rolls, etc.

NGSS Alignment

Kindergarten

K-2-ETS1-1 - Ask questions, make observations, and gather information about a situation people want to change to define a simple problem.

K-LS1-1 - Use observations to describe patterns of what plants and animals need to survive.

Grades 1–2

1-LS1-1 - Use materials to design a solution to a human problem by mimicking how plants or animals use their external parts.

K-2-ETS1-2 - Develop a simple sketch, drawing, or physical model to illustrate how an object works.

Grades 3–5

4-LS1-1 - Construct an argument that plants and animals have internal and external structures that function to support survival.

3-5-ETS1-1 - Define a simple design problem reflecting a need or want that includes criteria for success.

3-5-ETS1-2 - Generate and compare multiple possible solutions to a problem.



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