



Science Objectives

- Students will learn some basics of fish anatomy, including features that can help in fish identification.
- Students will use a simulation to help identify 9 different species of fish based on these characteristics.

Vocabulary

- ichthyology
- air bladder
- dorsal fin
- pelvic fin
- caudal fin
- gills
- buoyancy
- pectoral fin
- anal fin

About the Lesson

- In this lesson students learn about basic fish biology, and they will identify a variety of fish species.
- Students will:
 - Identify and describe the function of organs that are unique to fish.
 - Use the fins and pattern of the scales of fish to identify nine different species of fish.

TI-Nspire™ Navigator™

- Send out the *Which_Fish.tns* file.
- Monitor student progress using Class Capture.
- Use Live Presenter to spotlight student answers.

Activity Materials

- *Which_Fish.tns* document
- TI-Nspire™ Technology



TI-Nspire™ Technology Skills:

- Download a TI-Nspire document
- Open a document
- Move between pages
- Open a Directions Box

Tech Tips:

Make sure that students understand how to select an answer to a question using

.

Lesson Materials:

Student Activity

- *Which_Fish_Student.doc*
- *Which_Fish_Student.pdf*

TI-Nspire document

- *Which_Fish.tns*

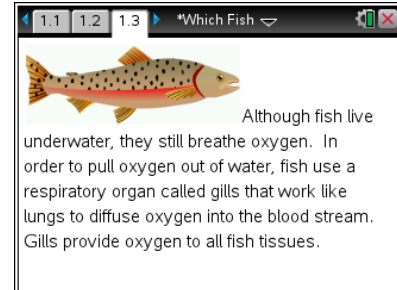


Discussion Points and Possible Answers

Allow students to read the introduction on the activity sheet.

Move to pages 1.2 – 1.4.

1. Students should read the introductory material on pages 1.3-1.4. This will introduce them to two organs of fish, gills, and the air bladder.



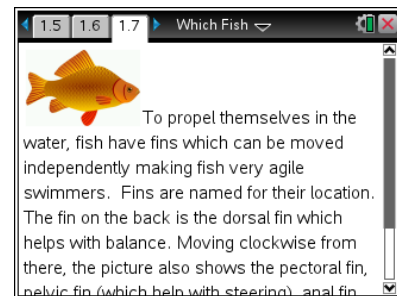
Have students answer question 1 on the activity sheet, in the .tns file, or both.

- Q1. What would happen to a fish with no air bladder? Explain.

Sample Answer: The fish would use energy to stay at any depth in the water. The fish might sink.

Move to pages 1.6 – 1.7.

2. Have students read the information about the observable characteristics that can be used to identify different species of fish. Fins and scales will be important for the identification activity at the end of the lesson.



Have students answer questions 2–4 on the activity sheet, in the .tns file, or both.

- Q2. Which fins steer a fish?

Answer: B. Pelvic fins

- Q3. What does the air bladder do?

Answer: D. Provides buoyancy

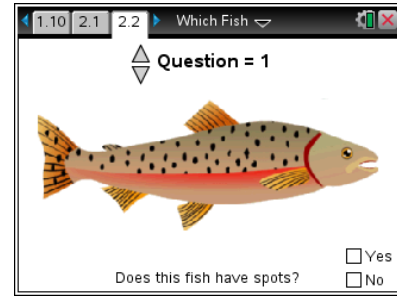
- Q4. What is one purpose of fish scales?

Answer: D. Protect skin





Move to pages 2.1 – 2.2.

3. After this basic introduction to fish structure, students will read the information on page 2.1 and then use the simulation, representing a dichotomous key, on page 2.2 to identify nine fish species. The directions given to students on how to use the simulation are given below:



Directions

1. Observe each fish carefully.
2. Answer the question yes or no.
3. Click the question clicker to go to the next question.
4. Click on the fish to choose a new one.

Students can click  to close the directions and view the simulation. If needed at any time during the simulation, students can press  if they would like to view the directions again.

Have students answer questions 5–13 in the .tns file.

- Q5. What is the name of this fish?

Answer: Eastern Razorfish



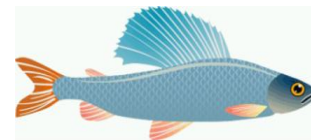
- Q6. What is the name of this fish?

Answer: Eastern Carp



- Q7. What is the name of this fish?

Answer: Caribbean Jewel Fish



- Q8. What is the name of this fish?

Answer: Green Darter



- Q9. What is the name of this fish?

Answer: Stippled Darter



- Q10. What is the name of this fish?

Answer: Greater Pike





Q11. What is the name of this fish?

Answer: Pink Sturgeon



Q12. What is the name of this fish?

Answer: Northern Trout



Q13. What is the name of this fish?

Answer: Spotted Trunkfish



TI-Nspire Navigator Opportunities

Choose a student to be a Live Presenter to demonstrate how to negotiate the fish identification simulation. The questions in the activity may be distributed as Quick Polls or used as a formative or summative assessment

Wrap Up

When students are finished with the activity, retrieve the .tns file using TI-Nspire Navigator. Save grades to Portfolio. Discuss activity questions using Slide Show.

Assessment

- Formative assessment will consist of questions embedded in the .tns file. The questions will be graded when the .tns file is retrieved. The Slide Show will be utilized to give students immediate feedback on their assessment.