GIFTED & TALENTED INDEPENDENT STUDY

Reading the Water: The Science of Fish Behavior and Finding the Best Fishing Spots

Student: **Grade:** 5-6 **Length:** 3-Week Sprint

ESSENTIAL QUESTION (DOK 4)

What scientific factors determine where fish live and feed, and how can that knowledge predict the best fishing spots?

Your Challenge (Problem-Based Learning Scenario)

A local outdoors magazine wants to publish a 'Young Angler's Guide' to a body of water near you. They've hired you to research the science of fish behavior and turn it into a practical, science-backed fishing guide.

Depth & Complexity Lenses to Apply Throughout

Depth & Complexity Lens	Guiding Prompt to Keep Asking Yourself
Patterns	What patterns exist in when and where fish feed — time of day, season, weather?
Rules	What biological and environmental 'rules' determine where a fish species can survive — temperature, oxygen, structure?
Details	What specific details about a body of water — depth, structure, vegetation — matter most to fish?
Trends	How do fish locations change with the seasons or water temperature over the year?
Big Idea	How does understanding an animal's biology help predict its behavior?

Guiding Investigation Questions (DOK 3-4 / Upper Bloom's)

The Science Behind Fish

- Analyze how water temperature and oxygen levels affect where a specific fish species chooses to live. *[Analyze, DOK 3]*
- Evaluate which factor most strongly predicts fish location for your chosen species — temperature, structure, food availability, or time of day. Defend your answer with evidence. *[Evaluate, DOK 4]*

Locations of Fishing Spots

- Analyze the physical features — depth, structure, vegetation, current — of at least 2 real fishing spots and compare them. *[Analyze, DOK 3]*
- Design a science-based fishing guide/map for a local body of water, marking predicted best spots by season and explaining why. *[Create, DOK 4]*

Research Menu — Choose at Least 3 Ways to Investigate

- Research the biology — diet, preferred temperature, habitat — of 1-2 fish species found locally.
- Interview an experienced angler about how they choose where to fish and why.
- Study a map or satellite image of a local lake/river and identify likely fish habitats based on structure.

- Track weather/temperature/season data and predict how fish location would shift over a year.
- Research fishing regulations and conservation practices — catch limits, seasons — for your area.

Show What You Know — Product Choice Board

- Illustrated fishing guide/map with labeled predicted hotspots and scientific reasoning
- Poster board explaining the science behind fish behavior
- Field journal documenting observations, research, and predictions
- Video or slideshow presenting your guide like an outdoors show host

Along the way, use at least one product option to show progress at each weekly checkpoint (see timeline below).

Study Timeline

Week	Focus	Checkpoint (Show Your Progress)
Week 1	Research fish biology and behavior.	Species research notes
Week 2	Analyze local water features and interview an angler.	Site comparison + interview notes
Week 3	Build your final fishing guide.	Final guide/map + presentation

Final Project

Create a science-based 'Young Angler's Guide' for a real local body of water that identifies predicted best fishing spots by season, backed by the biology and environmental science you researched.

Audience:

Classmates, teacher, or family/fishing community members.

Success Criteria:

- Explains at least 2 scientific factors that determine fish location
- Guide includes specific, realistic locations with reasoning, not guesses
- Shows understanding of seasonal/environmental change
- Guide is clear, organized, and usable by an actual angler

Reflection Journal Prompts

- What scientific fact about fish surprised you the most?
- How did talking to an experienced angler compare to what the research said?
- If you could research one more fish species, which would it be and why?