3rd/4th Ecosystems

Lake Sturgeon

Week 1

Day 1:
- Kagan activty w/ http://story.illinoisstatemuseum.org/content/lake-sturgeon
- Think, notice, wonder (paper)

Day 2: QFT
- Google Sheet (groups)
  - Formulate questions (of own volition- jot thoughts style on spreadsheet)
  - Formulate questions (Q-matrix on paper- jot thoughts on google sheet)
  - Open/closed designation
  - Question prioritization

Day 3:
- Placemat consensus with class questions
- Socratic seminar style sharing & class consensus

Day 4:
- LEGO fish

For QFT - state your question out loud. Cannot repeat question within the group. Come to a consensus as a group to priority questions. Can't mark it as such until everyone agrees.
Day 3 - Each group gets all the questions and place them on the placemaps. each group comes up with placemat consensus. And then class discussion on why we chose to place questions where we did.

Week 2

Day 1-2: Lego fish & wrap up convo about traits “sturgeon”/fish has that help it survive in water
Day 2-3:

- Text rendering Round 1: Species Spotlight on Sturgeon (paragraphs 1-2)
- Text rendering Round 2: Species Spotlight on Sturgeon (paragraphs 3-5)
- Add information back to driving question board

Day 3-4:

- Independent investigation (main idea: there are different types w/dif. traits)
  - Pennsylvania Sturgeons (types of sturgeons) (adapted version in Google Drive)
  - Chicago’s Largest Fish are Older Than Dinosaurs (adapted version in Google Drive)
  - WorldBook Students- Sturgeon
  - *let them google “sturgeon”
- Add information back to driving question

By end of week, understand: dif types of sturgeon w/dif traits → dif habitats/ecosystems → we need to explore geographic/ecosystem features

Build the fish - identify structures and their functions to help it survive. → set up readings as to do research on what traits sturgeon and their environments have that enable them to survive
After reading, may be able to identify more structures and how they function.

Week 3

Day 1: Maps of routes/places sturgeon types are found (map skills/landforms)
- Use NOAA website to find where different types are located and map them on a blank map (Oceans)
- Use USGS website to find where lake sturgeon are located and how geographic features may have contributed/inhibited migration (e.g. mountains, dams)
- Use USGS Sturgeon Query to review animated maps of where dif sturgeon are
- Use Map of Major Dams to locate dams and relate to sturgeon movement

Day 2: Brief habitat exploration: Habitats and the Ecosystem (use river, lake, or ocean)
Day 3-4: Ecosystems:
- Defining ecosystems: What is an ecosystem?
- Definitions (biotic, abiotic, etc.) World Book- Ecosystem
- Exploring ecosystems: Ecosystems as Systems - Analysis Questions included.
  - Model w/ Under Water Under Earth Book

*Provide student copies of map for sturgeon plotting
What is a habitat?
- Define
- Define different elements of a habitat
- Describe different habitats
- Circle & yarn activity

What is an ecosystem
- Group definitions
- An ecosystem is... using graphic organizer and sites from PPT links
- Review initial group definitions and graphic organizer

ecosystem exploration → traits of animals make them able to survive → adaptations → sturgeon adaptation & migration (survival despite dino extinction)
sturgeons & humans causing problems
sturgeon solutions possibilities

Keep relating what we've learned back to the Driving Questions board.

Week 4

Day 1-3: Ecosystem exploration (via WorldBook, Epic, Books, Interactives)

Expert groups

Each assigned a body of water

Research to answer: Part II, Questions under Ecosystems as Systems

Day 4: 3-2-1 jigsaw

- List 3 facts you found from your ecosystem exploration
- Share with another group and make 2 connections with their facts
- 1 question you still have.

Keep relating what we've learned back to the Driving Questions board.

Week 5

Day 1: Choose biotic element from expert group ecosystem & research (graphic organizer TBD) traits it has that help it survive

Day 2: Share findings & come up w/class list of ways animals survive/adapt

Day 3-4: Animal Adaptations

Going back to books/resources we used in our ecosystems expert groups.
Animal Adaptation Stations & Pictures:
https://natural-history.uoregon.edu/education-and-events/teacher-resources Choose or combine stations.
Keep relating what we've learned back to the Driving Questions board.

Week 6

Day 1: Sturgeon Sturgeon Adaptation Game

Day 2-4: Sturgeon Unit

Keep relating what we've learned back to the Driving Questions board.

Week 7

Day 1-3: Continue Sturgeon Unit

Day 4: Sturgeon Migration Simulation

Keep relating what we've learned back to the Driving Questions board.

Week 8

Day 1: CAI (Cash p. 178) Pros/Cons of possible solutions from Part C

Day 2-4: Lego solution (build, code, add to CAI)

Potential LEGO mechanisms for solutions: (5 spin/5a crane (lift gate), 6 flex/6a floodgate, 11 revolve/11b bridge, 13 sweep/13a sea cleaner, 7 reel/7a helicopter reeler, 14 motion/14a detector)

Week 9

Day 1-2: Presentations of prototypes, pros, & cons

Day 3-4: Class vote & Call to Action