General Information

Lesson Parts & Duration

Total Duration: 1 hour

- Food Chains & Food Webs: Compare & Contrast

Subject(s)

- ELA; Informational Text: Food Chains & Food Webs
- Compare & Contrast (RI.5.1-5.3, 5.6)

Objective

- Students will take literal interpretation of informational text to evaluation and synthesizing.
- Students will complete a graphic organizer to compare and contrast food chains and food webs.

Materials

- **Required:** copies of Informational Text: "Food Chains & Food Webs" (1 copy per student) (page 4)
- blank paper
- pencil & crayons/colored pencils
- document camera or whiteboard
- **Optional:** printable "Comparing Design" thinking design graphic organizer (page 5) or project using document camera for students to copy
- **Optional:** printable "Break Up Your Day" brain/movement break ideas (page 7)

Protocols (page 6)

- Used throughout lesson - be familiar with each protocol.

Throughout this lesson, you will find:

- ***Scripted Text*** indicates things that need to be said directly. Bullets starting with a **"T"** followed by *italicized type* indicate scripted text
- **Clarifiers** within scripted text are in orange
- **Teacher Directions** indicate things you should be doing
- **Side notes** provide helpful hints, ELL strategies, differentiation and information
- **Break Up Your Day** (Brain/Movement Breaks) are in green boxes (at the end)

Remember!

Quality over quantity. All components do not have to be accomplished; lessons may be ended at any time and resumed later.

Instructional Plan: 45-60 minutes

Introduction

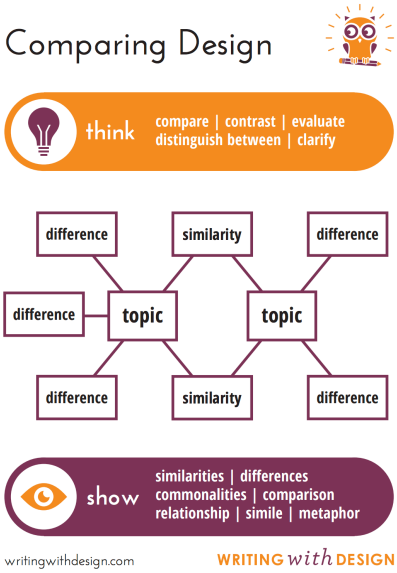
- ***T*** *Today we are going to learn about living things and how they get their energy through the process of food chains and food webs.*
- ***T*** *Has anyone heard of either of these processes (food chains or food webs) or know anything about them?* **Call on a few volunteers to share their ideas. If no one volunteers, continue with the introduction.**
- ***T*** *How about living things and how they get their energy? Does anyone know how a flower gets its energy?* **Call on a few volunteers to share.** Answer: flowers get energy by taking in light from the sun
- ***T*** *In a few minutes, we will read an article that will mention flowers and other living things, and you will learn more about how these living things get their energy.*

Distribute 1 copy of the Informational Text, "Food Chains & Food Webs."

Vocabulary & Comprehension

- ***T*** *As soon as you have your copy of the text on food chains and food webs, please write your name on the top right corner.*
- ***T*** *First, I would like you to please read the text independently.*
- ***T*** *While you are reading, I want you to try to circle at least one unfamiliar word in each paragraph.*
- ***T*** *Then you also need to underline what you believe are the most important details in the text.*

Remember to walk around, amongst students, to make sure they are on task and reading.



- ***T*** *We will be comparing and contrasting food chains and food webs.*
- ***T*** *Who can tell me what either compare or contrast means?* **Call on several students to share definitions.** Answer: compare means to find similarities & contrast means to find differences
- ***T*** *We will be completing a graphic organizer to collect our information.* Show graphic organizer to students.
- ***T*** *On your paper please title it with: "Food Chains & Food Webs – Compare and Contrast".* Model this so students can copy your example.
- ***T*** *Then we are going to make 2 squares in the center.*
- ***T*** *Each square will represent a different topic.*

Provide time and ensure that students have correctly replicated the graphic organizer.

- ***T*** *Now we are going to read the text together I want you to think about what topics are being compared and contrasted in this text.* Read text aloud. Students should be following along as you read.

"Comparing Design" Thinking Map graphic organizer

- ***T*** *You will start by coming up with your two topics.*
- ***T*** *I would like you to fill in at least 1 similarity and 2 differences.*
- ***T*** *You will need two colored pencils for this activity.*
- ***T*** *Please use one color for your similarities and one for your differences.*
- ***T*** *For example, if I wanted to compare a dog and a cat, I may say that the similarity is they are both animals, and I would write that in red.*
- ***T*** *The difference is that cats are members of the feline family and dogs are members of the canine family, and I would write that in blue.*
- ***T*** *Please raise your hand if you need any help.*

Provide time for students to complete their "Comparing Design" thinking map (graphic organizer). Differentiation ideas in box on the right.

- ***T*** *Now that you have come up with a few differences and at least one similarity, you are going to share your ideas with a partner.*
- ***T*** *Then we will use the* Give one & Get one *protocol to get new ideas from a partner and write down that information.*
- ***T*** *With your partner one of you will be a 1 and the other will be a 2.*
- ***T*** *1's will share first and 2's will copy that idea onto his/her own chart.*
- ***T*** *Then 2's will share their ideas and 1's will copy those ideas onto their own chart.*

Differentiation:
Struggling Students: Provide lines in the text they can reference to find examples.
Challenge: See if students can create even more similarities and differences.

Give one & Get one
- Students share information in Ask & Justify
- Each student in the pair writes down the information shared by their partner
- If the information is already written, a check is put by the information

Give one & Get one

Provide time for students to work in partners to complete their graphic organizer, and walk around to make sure they stay on task.

- ***T*** *Eyes on me in 5...4...3...2...1...0. Thank you!*
- ***T*** *Please take a moment to wrap up your work together and finish writing your last few words.*
- ***T*** *Hopefully you had the chance to complete your graphic organizer and got some good ideas.*
- ***T*** *Let's take a few minutes to review as a class.*
- ***T*** *If you hear any new ideas being shared, please add them to your graphic organizer.*

Call on 3-5 students to share their examples, using equity sticks if available. Encourage students to explain their ideas using complete sentences. Possible answers: Similarities - both food chains and food webs show how energy is transferred between living things, both food chains and food webs show relationships in an ecosystem Differences - a food chain easily shows how plants and animals get their energy while a food web is much more complex, a food web consists of many food chains, scientists can observe more interactions in a food web than they can in a food chain, researchers are able to see patterns within and across various ecosystems

Collect their compare and contrast "Comparing Design" thinking map (graphic organizer) as an assessment piece for the teacher.

Make sure to "Break Up Your Day!"

Now is a great time to take a break and get students re-energized.
See our list of engaging movement and brain break ideas to get your students moving and ready to refocus! (see page 7)

Food Chains & Food Webs

by Jennifer Kaul

Living things need energy to live, and they get their energy in different ways. Most plants, for example, get their energy from the sun in a process called photosynthesis. Animals get their energy from eating these plants and other living things. Regardless of which living thing is involved and how they gain their energy, the process can be shown through food chains and food webs.

By demonstrating the flow of energy in a food chain, it is easy to show how plants and animals obtain energy. For example, a flower gets its energy by taking in the light of the sun. A butterfly gets its energy by drinking the nectar of the flower and, in turn, provides energy when it is eaten by a small bird. A fox then gets its energy by consuming the small bird. These living things are able to transfer energy because they are all part of the same ecosystem.

Like food chains, food webs show relationships in an ecosystem. However, they are much more complex. A food web is made up of many food chains like a spider's web is made up of many threads. For instance, small birds are not the only creatures that eat butterflies. Spiders also eat butterflies, as do wasps, toads, and several other living things. Snakes, raccoons, and larger birds also eat small birds. When scientists develop food webs, they can see more interactions than is possible in a single chain. Studying these complex interactions between living things allows researchers to observe patterns within and across different ecosystems.

While food chains and food webs are different, both display how energy is transferred between living things. This helps people gain an understanding of the importance of each plant and animal in an ecosystem and how they are connected.

References

Chesapeake Bay Program. (n.d.) *Food Web.* Retrieved from http://www.chesapeakebay.net/discover/bayecosystem/foodwebs.
CK-12 Foundation. (2017.) *Food Chains and Food Webs.* Retrieved from http://www.ck12.org/biology/food-chains-and-food-webs/lesson/Food-Chains-and-Food-Webs-BIO/.
Geography for Kids. (n.d.) *Ecosystems.* Retrieved from http://www.kidsgeo.com/geography-for-kids/0164-ecosystems.php.

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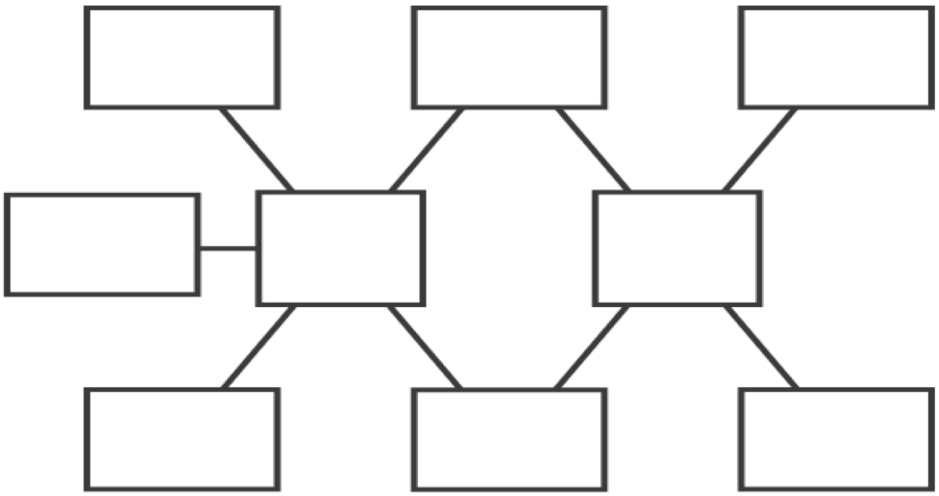
Food Chains & Food Webs – Compare and Contrast

Comparing Design



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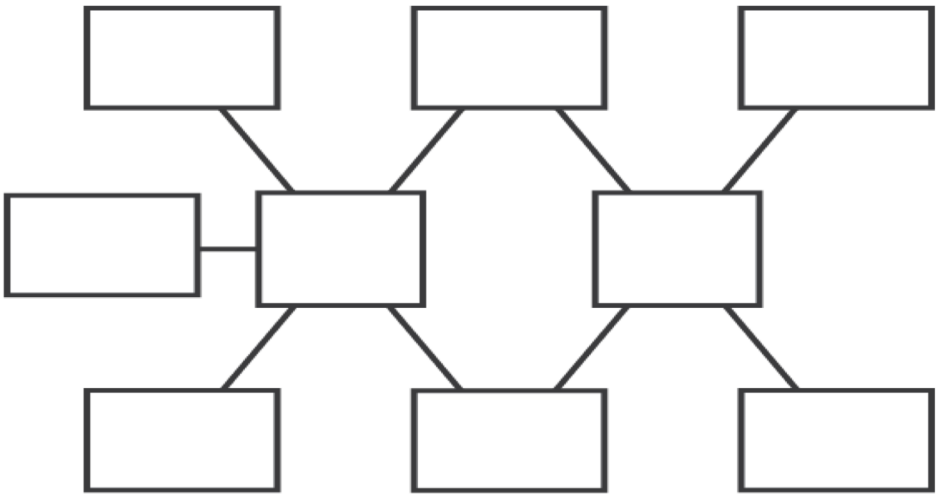
Food Chains & Food Webs – Compare and Contrast

Comparing Design



Protocols:

Ask, Answer, and Justify

- Put students in pairs: have them assign themselves a number 1 or 2
- Roles for number assignments:
  - 1's will ask the question first and 2's will respond
  - Then 2's will ask the question and 1's will respond
  - The next time 2's ask the question first

On your feet/ Get ready to meet/ Go and Greet (should take less than one minute)

- Students stand up and put their hand up in the air
- Students find another student that has their hand up to have a "new" partner (and get them moving around)
- Once they are with their new partner, they put their hands down and face the teacher

Give one & Get one

- Students share information in Ask & Justify
- Each student in the pair writes down the information shared by their partner
- If the information is already written, a check is put by the information

Back to Back and Face to Face

- When in pairs, direct students to stand back to back
- Ask the students to consider the question
- Give students at least a minute to consider their response
- Have them turn face to face
- Follow the protocol for Ask and Justify

Share out and check for understanding

- Follow the protocol for Ask and Justify
- Ask students to share their response to the question
- Verify that response or conclusion is correct
- If needed, provide clarification

(Used throughout lesson - be familiar with each protocol.)

Note: Place Protocols under a document camera (if available) as necessary throughout the lessons

Make sure to "Break Up Your Day!"

These can be used in the middle of a lesson or at the end of your lesson.

Here are a few engaging movement and brain break ideas to get your students moving and ready to refocus!

Break Up Your Day: Chain of Events!

- Teacher states: "I will start a story.
- You and your shoulder buddy must continue the story using only cause and effects.
- For example, if I said, "One day you were late to school…
- The effect could be you missed breakfast at school.
- The missed breakfast is now the cause and the effect of that is you couldn't concentrate during math.
- Lack of concentration is now the cause and the effect is you failed your math quiz.
- I had only four cause→effects: 1) late, 2) missed breakfast, 3) couldn't concentrate, 4) failed quiz.
- Keep going until you run out of time.
- I will give you one minute to see how many cause and effects you and your buddy can find for your Chain of Events!
- Your chain starts with, "One day I couldn't find my shoes…"

Break Up Your Day: Inventions!

- Students brainstorm with a shoulder buddy an invention that would make their lives better.
- Logistics and practicalities do not matter - tell them to shoot for the moon. (example: tennis shoes that float, pencils that write what you say, lunch sacks that are edible).
- Students then draw, label and write a short description of the invention on a half piece of paper.
- Students may share their inventions with the class or with a shoulder buddy.

Break Up Your Day: Thumbs Up!

- Student is called on (use name cards or equity cards if available) to state a quality they see in themselves (kindness, honesty, hard work, humor).
- Other students signify whether they see that quality in themselves.
- Tally their responses.
- The quality with the most votes or Thumbs Up is the theme for the classroom!