Knowledge Trees

Objectives: 1. To select and organize information from the texts to build background knowledge

2. To develop vocabulary for the classification of information (e.g., description, habitat, behavior, life cycle and humans and animals together)
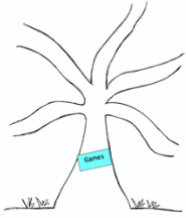
Step 1: Explain the Knowledge Tree Activity[1]

Materials needed:
- Knowledge Tree template with projector or whiteboard/chart paper for hand-drawn template
- Sticky notes suited to size of tree with three different colors for the details

For the teacher: A tree is used to symbolize a body of information and to organize the information in a hierarchy. The trunk represents the **topic**—the subject of the whole article. The branches represent **categories**, which are the subtopics of information about the topic. The leaves represent **details**, which is specific information about a category. See Enlarged Images of the Knowledge Trees from Step 1 (page 3) to view these labels applied to the tree.

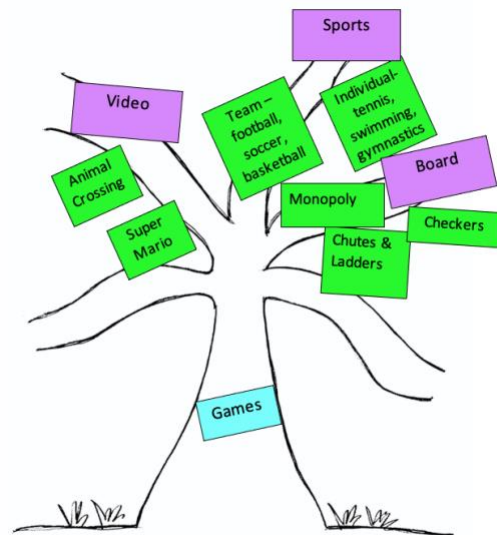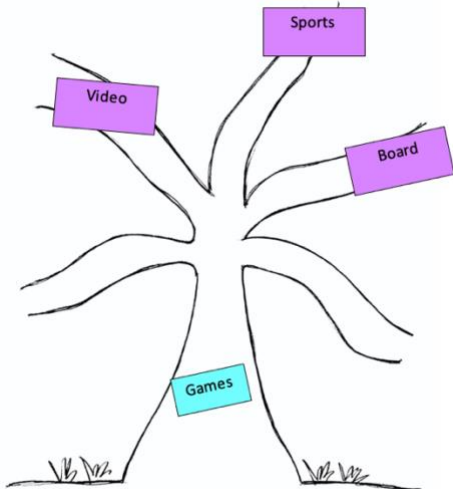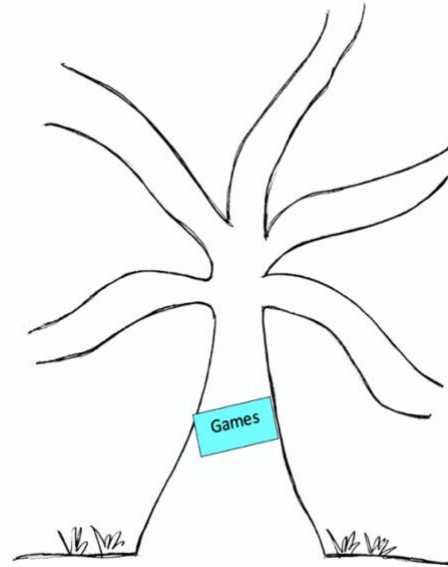**With students**: Follow these steps.

1. Display the Knowledge Tree graphic organizer. Tell students that the Knowledge Tree helps us organize information. Let's try it out with a topic we know—games! Note: Enlarged thumbnails are provided at the end of activity description on page 3.	
2. Tell students that the trunk is where we write the topic. Since we are gathering information about games, we write "games" on the trunk.	
3. Next tell students to think about kinds of games (e.g., video, sports, board). The kinds of games—we call them categories—go on the branches.	

4. Next, ask students to add some details about each kind of game. Specific games are an example of details. The details are the leaves.	

For the teacher: Repeat this process with another familiar topic if students need additional practice to illustrate the parts of the Knowledge Tree. For example, given the topic **school,** the categories could be **classrooms**, **playground**, and **gym**; given the category **food,** the categories could be **breakfast**, **lunch**, and **dinner.**

Enlarged Images of the **Knowledge Trees from Step 1**

Category
Category
Detail
Detail
Detail
Category
Topic

Games

Sports
Video
Board
Games

Sports
Video
Team – football, soccer, basketball
Individual-tennis, swimming, gymnastics
Animal Crossing
Board
Monopoly
Super Mario
Chutes & Ladders
Checkers
Games
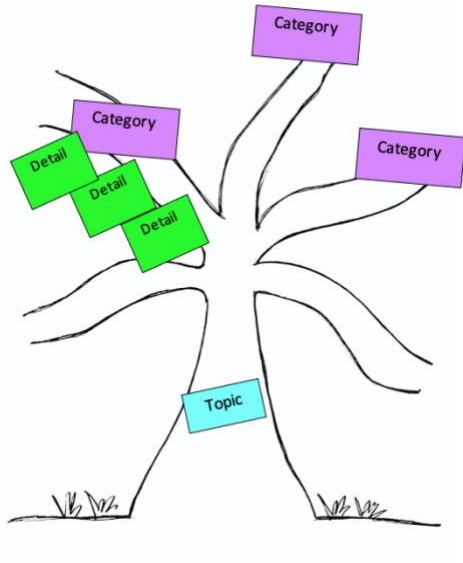
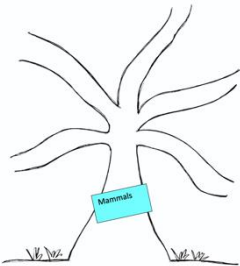## Step 2: Introduce the Animal Kingdom Using the Knowledge Tree

Materials needed:
- Knowledge Tree template with projector or whiteboard/chart paper for hand-drawn template
- The Animal Kingdom set of articles https://about.readworks.org/whole-phonics.html
    - "Mammals: Animals with Hair"
    - "Birds: Animals with Feathers"
    - "Amphibians: Animals for the Land and Water"
    - "Fish: Animals that Live Underwater"
    - "Arthropods: Animals with Lots of Legs!"
- Sticky notes suited to size of tree with three different colors for the details
- Prepared sticky notes for the selected article including topic and the categories:
    Trunk: animal group specific to the article: **mammals**, **birds**, **amphibians**, **fish**, **arthropod;**
    Branches: Description, Habitat, Life Cycle, Behavior, Human and Animals Together

For the teacher: Repeating the same process used in Step 1, create a Knowledge Tree for each article listed under "Learn About the Animal Kingdom" at https://about.readworks.org/whole-phonics.html. The goal is to create a Knowledge Tree for each animal group—**mammals**, **birds**, **amphibians**, **fish**, and **arthropods**—while simultaneously establishing the vocabulary for the categories and acquiring background knowledge about each group. See Enlarged Images of the Knowledge Trees from Step 2 (page 6) to view these labels applied to the tree.

These passages are for listening comprehension, so there is a Read Aloud protocol to guide students through the listening process for each article.

With students: Follow these steps.

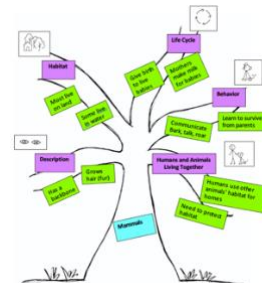|	
1. After reading the article "Mammals: Animals with Hair," display the Knowledge Tree graphic organizer. Remind students that the Knowledge Tree helps us organize information. Tell students that the topic for this tree is mammals. Note: Enlarged thumbnails are provided at the end of activity description on page 6.	
2. Next remind students that the trunk is where we write the topic. Since we are gathering information about mammals, we write "mammals" on the trunk.	

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3. Explain to students that there are five categories of information that we will learn about mammals:
 	
    a. **Description** – What do they look like?
    b. **Habitat** – Where do they live?
    c. **Behavior** – How do they act?
    d. **Life cycle** – How do they change during their lives?
    e. **Humans and animals together** – How do animals help or harm humans? How do humans help or harm animals?
 	
Add the category labels to the branches of the tree. These category labels are key vocabulary that reoccur throughout the article sets.
 	
Note: Use icons to cue students to any category vocabulary that exceeds the students' reading ability.	
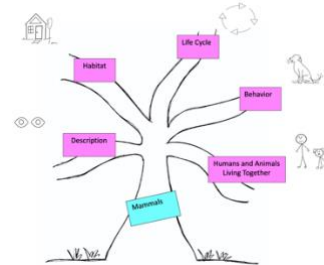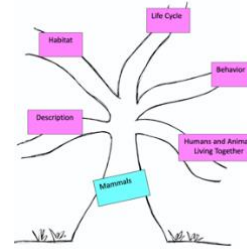
4. Then, read the article "Mammals: Animals with Hair" to the students. Have students identify details about the categories. Write the information on sticky notes and add them to the branches. The details are the leaves.	
5. Use the Knowledge Tree to model retelling the information about mammals. Because most students will not be able to read the information on the sticky notes, help them recall the information through guided questions. Also, use the icons for each category to prompt students in their retellings.[5] Have students take turns retelling the information. Repeat this process with the remaining articles in "Learn About the Animal Kingdom." Use questions, choices, and references to the Knowledge Tree to guide students to recall details. Encourage students to provide what they recall from the articles rather than limiting them to the examples provided on the Knowledge Tree guides. Guide students to use information from the articles rather than relying on their prior knowledge. Also encourage students to use the category vocabulary (e.g., habitat) in their retellings.	Sample retell: Mammals are one group in the animal kingdom. Mammals have hair and a backbone. Most mammals live on land. Some live in the water. Mother mammals give birth to live babies and make milk for them. Mammals learn to survive from their parents. Mammals communicate in lots of ways. Humans use mammals' habitat for their homes. Humans need to protect the mammals' habitat.

Enlarged Images of the **Knowledge Trees from Step 2**
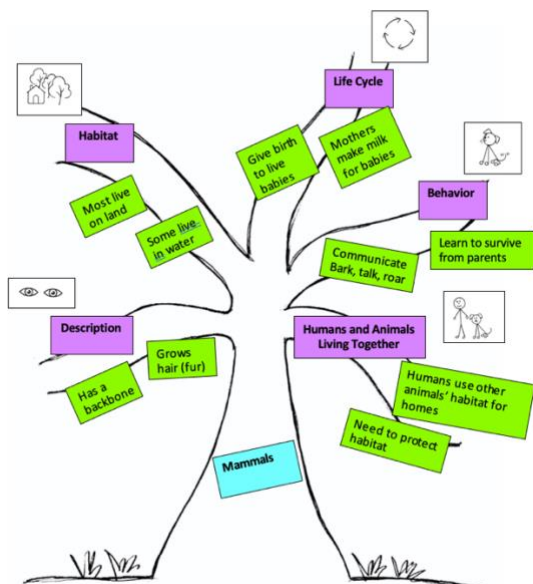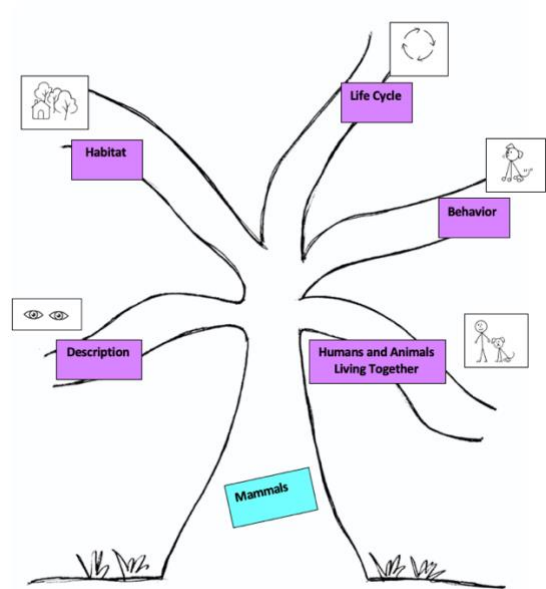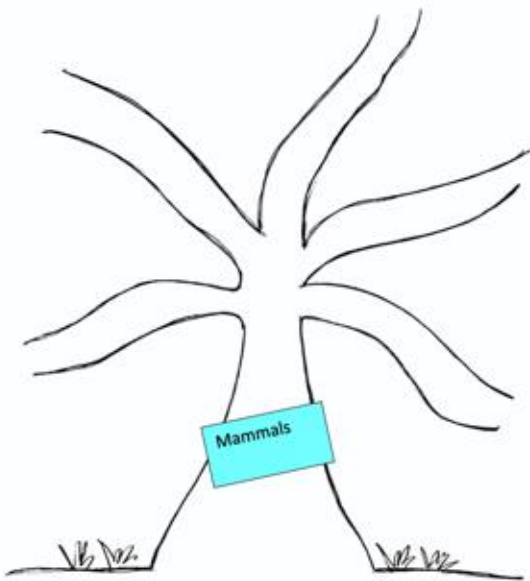
Key to colors:

Blue is the topic

Purple is for the categories

Green is for the details

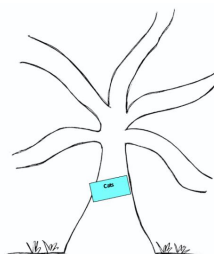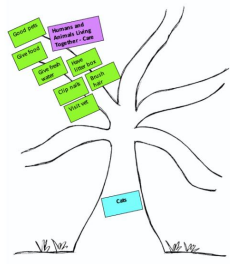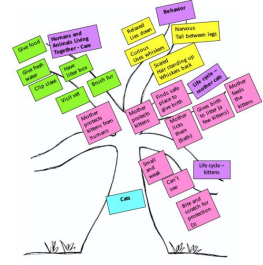## Step 3: Use the Knowledge Tree with ReadWorks Article Sets

Materials needed:
- Knowledge Tree template with projector or whiteboard/chart paper for hand-drawn template;
- The set of articles aligned with *Zac's Pal* https://about.readworks.org/whole-phonics.html.
  - "Cats Need Care"
  - "Cats Show How They Feel"
  - "Mother Cats and Their Kittens"
- Sticky notes suited to size of tree;
- Prepared sticky notes for the selected article including topic and the categories. Use the Knowledge Tree answer guides to help with preparation of the topics for each article.[2]

For the teacher: Use the Knowledge Tree to guide students to select and organize information from what they listen to or read. The following example is for the set of articles about cats aligned with the first book of Whole Phonics, *Zac's Pal.*

Note: In the following description of the Knowledge Tree activity, content from each article is shown in color to illustrate the process to teachers. Details from article 1 are green, article 2 are in yellow, and article 3 are in pink. Teachers can use different color schemes but should be consistent in the colors representing each level of the hierarchy. See Enlarged Images of the Knowledge Trees from Step 3 (page 10) to view these labels applied to the tree.

These passages are for listening comprehension, so there is a Read Aloud protocol to guide students through the listening process for each article.

1.	Display the Knowledge Tree graphic organizer. Remind students that that the Knowledge Tree helps us organize information. Let's try it out with a new topic – cats. Ask students what they know about cats. Put their prior knowledge on a different color sticky and post alongside the tree. After students listen to the articles and create the Knowledge Tree, review their pre-listening stickies and add them to the appropriate branch of the tree. Note: Enlarged thumbnails are provided at the end of activity description on page 10.	
2	Tell students that the trunk is where we write the topic. Since we are gathering information about cats, we write "cats" on the trunk.	

3	Reread the first article in the set – "Cats Need Care"— to the students. Provide the category label for the branch. Have students identify details about the category. Write the information on leaves and add them to the branch. Review the meaning of the category labels (e.g., habitat refers to where the animal lives) to guide students in identifying details for the categories.	
4	After reading the second article in the set – "Cats Show How They Feel" – to the students, provide the category label for the branch(es). Have students identify details about the category. Write the information on leaves and add them to the branch.	
5	After reading the third article in the set – "Mother Cats and Their Kittens"— to the students, provide the category label for the branch(es). Have students identify details about the category. Write the information on leaves and add them to the branch. Some details may fit in a previous category. Place the detail on the appropriate branch. After students listen to the articles and create the Knowledge Tree, review their pre-listening stickies and add them to the appropriate branch of the tree.[3]	

6	Throughout the process:
	  a. Reread articles to add information. Ask questions to prompt students to identify details they may have missed. Use the Knowledge Tree guides that are provided to help, but be flexible with students' responses.
	  b. Use pictures to represent details when possible.
	  c. Encourage the use of the category labels.
	  d. As students learn the process, guide them to determine the categories based on the details.	

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7. Use the Knowledge Tree to model retelling the information about cats. Because most students will not be able to read the information on the leaves, help them recall the information through guided questions. Also, use the icons for each category to prompt students in their retellings. Have students take turns retelling the information. Use questions, choices, and references to the Knowledge Tree to guide students to recall details. Encourage students to provide what they recall from the articles rather than limiting them to the examples provided on the Knowledge Tree guides. Guide students to use information from the articles rather than relying on their prior knowledge.	Sample retell: Cats need humans to care for them. Humans give cats food, water and a litter box. They also take their cats to the vet. Cats' behavior shows how they feel. A relaxed cat lies down. A nervous cat puts its legs between its legs. Mother cats take care of their kittens. They also protect the kittens. Kittens can't see and are weak, so they need protection.

Enlarged Images of the **Knowledge Trees from Step 3**

Key to colors:

[cyan box]   is the topic
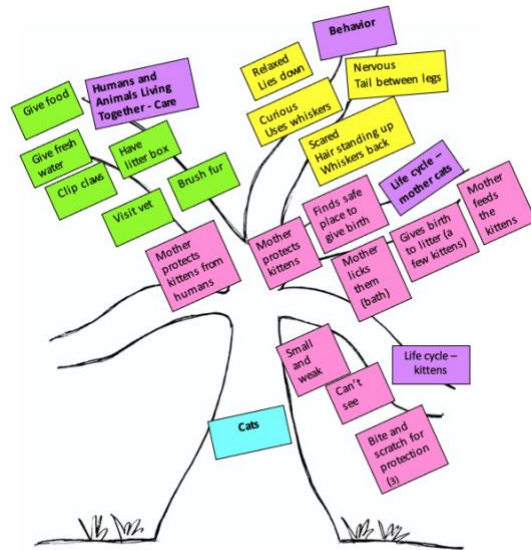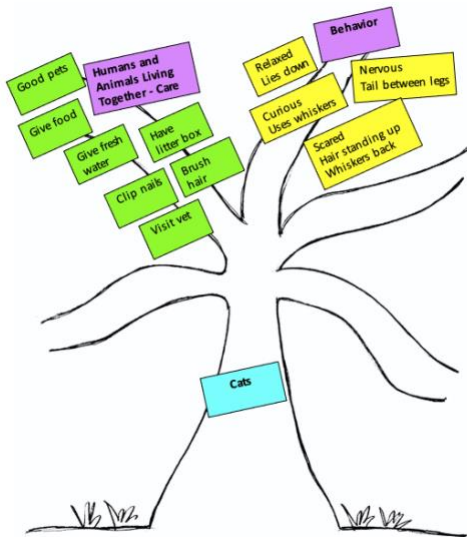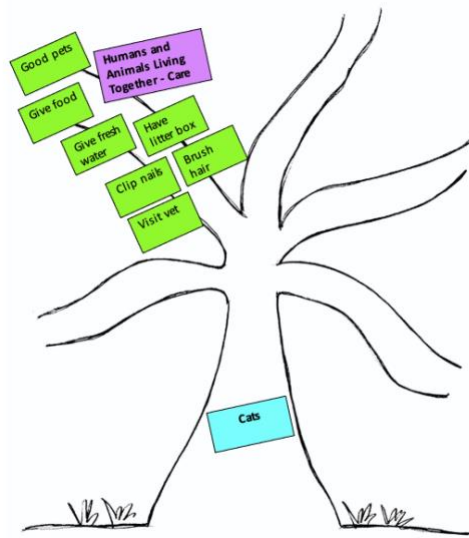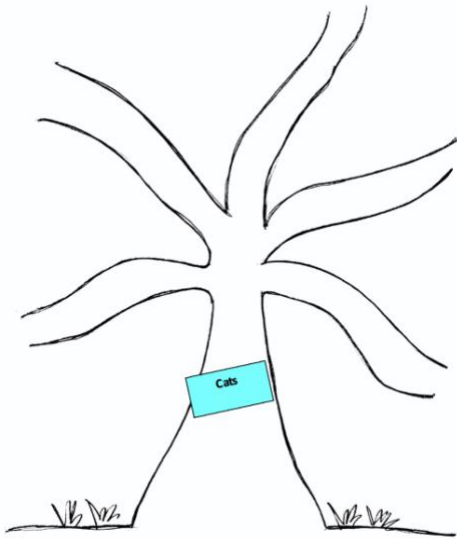
[purple box]   is for the categories

[green box]   is for the details in article #1   [yellow box] article #2   [pink box] article #3

Tips for Teaching:

[1]The Knowledge Tree activity is adapted from *Comprehension: Knowledge to Practice* (www.literacyhow.org). The Animal Kingdom Introduction simultaneously introduces the process for creating knowledge trees to gather and organize information from listening or reading text and the overarching focus of the content knowledge for the Level 1 of Whole Phonics and ReadWorks alignment.

[2]The "Knowledge Tree Answer Guides" provided on the ReadWorks website (page) reflect the hierarchy of information—topic, categories, and details—via color: blue is the topic, purple is for categories, and green (article #1), yellow (article #2) and pink (article #3) represents leaves.

[3]This additional step is designed to acknowledge and use students' prior knowledge. Encourage students to tell what they know about the topic prior to reading each article to them. Write what they know on individual stickies—using a different color than for the details from the articles—and post them next to the tree. After students listen to the articles and create the Knowledge Tree, review their pre-listening stickies and add them to the appropriate branch of the tree. Discuss when prior knowledge matches details from the articles.