**Development Document (Instructional Materials)**

 Unit goals

1. The learning standard for this unit is that students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment. The four curriculum areas that will be integrated are science, English language arts, social studies, and mathematics.

Objectives of the Instruction

Based on the Utah State Core Curriculum, students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment. The fourth grade students will:

1. Describe the physical characteristics of Utah's wetlands, forests, and deserts.
2. Describe the common plants and animals found in Utah environments and how these organisms have adapted to the environment in which they live.
3. Use a simple scheme to classify Utah plants and animals.
4. Observe and record the behavior of Utah animals.

Prerequisites

In order to be successful students must be able to do all of the following:

1. Before teaching the Utah environments unit the students should know how to read a map and where Utah is located in America.
2. Students should understand how to classify animals; this should be taught previously to the Utah environments unit. Students should know the animals that are native to Utah.
3. Students should know how to do a jigsaw, and how to work in small groups and with a partner.
4. Students should have been exposed to Venn diagrams and should know how to compare and contrast not only two but three different things.
5. Students should know how to read and interpret graphs, such as bar graphs, line graphs and pie charts.
6. Students should know how to compare whole numbers.
7. Students should know how to summarize non-fictional text.
8. Students should know how to write a complete sentence using capitals, punctuation and complete thoughts.
9. Students should know how to add and subtract whole numbers.
10. Students should know how to use measurement tools (such as a rain gauge) to measure rainfall.
11. Students should know how to use and read the degrees on a thermometer.
12. Students should know and understand the concept of altitude.
13. Students should know and be familiar with the seasons and weather patterns in Utah.

Introductory presentation of instruction

Students will view pictures of someone, in this case me, in all the different environments in Utah. I will tell him or her where I am in Utah and ask if anyone has been there and what it was like for them.

Basic plans for instructor materials

You will need the student Utah environments packet that has been put together for the entire unit. This packet has all materials for student use, but has been divided up into individual days for the instructor’s use. Pictures of the environments that are found in Utah will be needed.

Scope and Sequence

**Day One**

**Gaining attention (1-2 minutes)**

Welcome students to class. Today we will be learning about the environments in Utah. We will talk about the vocabulary words that we learned yesterday.

**Direction** (stating objectives) **(5 minutes)**

Today you will view a PowerPoint on Utah environments, we will review our three vocabulary words from yesterday and work in small groups (4-5) to gather information on our chosen environment to become an expert, then we will jigsaw and complete a three Venn diagram on our environments. Write the objective on the board and have the students read it with you.

**Content** (presentation of new material) **(8 minutes)**

View the PowerPoint that shows examples and gives definitions of the three environments in Utah.

**Content** (presentation of new material) **(10 minutes)**

Students will choose their favorite environment and get in small groups. They will become the expert on their environment. Form the students shared reading they will read about their environment either reading about deserts, forests, or wetlands. From the shared reading the students will need to:

1. Write down 5 plants from their environment
2. Write down 5 animals form their environment
3. Write down surface terrain
4. Write down precipitation
5. Write down temperature

**Application feedback—level 2** (eliciting performance) **(10 minutes)**

Have students jigsaw the information. The students will line up in three rows. Each row is the environment they chose. The first person in each row will make a group of three. When the students jigsaw the students will present their information that they gathered from their shared reading. Other students will take notes on their environment. Students should write two at least 2 plants and 2 animals from each environment. Students should also note surface terrain, temperature, and precipitation.

Have students return to their seats and pass out the three Venn Diagram to each student **(2 minutes)**

**Application feedback—level 3** (feedback) **(7-10 minutes)**

Class Discussion

As a class we will fill out the three Venn diagram.

-First start by labeling each big circle with desert, wetland, and forest.

Ask students:

What is unique about a wetland?

What is unique about a desert?

What is unique about a forest?

Students need to have 2 animals, 2 plants, surface terrain, temperature, and precipitation in the big circle of the Venn diagram. Fill out the Venn diagram on the doc cam.

Prompt the students about surface terrain, precipitation, and temperature.

-Let’s make a connection between wetland and forest, then forest and desert, and desert and wetland. Fill out the Venn diagram on the doc cam.

Make a connection between all three.

They are all environments

They all have plants

They all have animals

Fill this in on the paper, under the doc cam.

**Evaluation** (assessment) **(3 minutes)**

Ask students what they learned. Have them write down in a complete sentence their favorite wetland and why.

**Closure** (retention and transfer) **(2-3 minutes)**

Today you learned about the three environments in Utah. You have learned some of the animals and plants that live there. You have learned about the surface terrain, precipitation, and temperature. Send home habitat diorama parent note, ask students to bring a shoebox to school to start their diorama in class using class time. Dioramas will be started at school and finished at home. Have students read this note with you so that they know what is expected.

**Day Two**

**Gaining attention** Welcome students to class. **(1 minute)**

**Direction** (stating objectives) **(1 minute)**

Tell students that at the end of the lesson they will be able to orally describe Utah's wetlands (e.g., river, lake, stream, and marsh areas where water is a major feature of the environment) forests (e.g., oak, pine, aspen, juniper areas where trees are a major feature of the environment), and deserts (e.g., areas where the lack of water provided an environment where plants needing little water are a major feature of the environment). Write the objective on the board and have the students read it with you.

**Recall** (recall of prerequisite information) **(3 minutes)**

Ask the students what they recall about a wetland, forest, and desert? While discussing list out plants and animals, surface contents, temperature, and precipitation on the board under each heading (wetland, desert, and forest) as the students recall what they remember about them.

**Content** (presentation of new material) **(30 minutes)**

First view interactive PowerPoint on Utah Environments that highlights Wetlands, Deserts, and Forests. Show students the poster of the wetlands. Read the information on the back of the poster about wetlands. Point out the plants and animals that live in that environment and their adaptations. Hand out wetland worksheet. Have students draw in the plants and animals that live in wetlands per the worksheet. Then put the wetland poster up in the room for you to refer to later. Give students about 7 minutes to complete this worksheet. Circle the room while students complete the worksheet offering help if needed. Show student the poster of the forests. Read the information on the back of the poster about forests. Point out the plants and animals that live in that environment and the adaptations. Hand out forest worksheet. Have students draw in the plants and animals that live in forests per the worksheet. Then put the forest poster up in the room for you to refer to later. Give students about 7 minutes to complete this worksheet. Circle the room while students complete the worksheet offering help if needed. Show student the poster of the desert. Read the information on the back of the poster about deserts. Point out the plants and animals that live in that environment and highlight the adaptations. Hand out forest worksheet. Have students draw in the plants and animals that live in deserts. Then put the desert poster up in the room for you to refer to later. Give students about 7 minutes to complete this worksheet. Circle the room while students complete the worksheet offering help if needed.

**Application feedback—level 1** (guided learning) **(10 minutes)**

Review the posters that are now up in the room. Talk about the adaptations that each plant/animal has that allows it to survive in the particular environment. Make a chart on the board with each environment as a header and put plants and animals that belong in each environment and list their adaptation and why.

**Closure** (retention and transfer) **(2-3 minutes)**

Tell students to keep their papers; (you could have made a packet of all papers for this unit, or done papers individually for each day. Have students keep all papers to review from when needed. Remind students to being their shoebox for their project.

**Day Three**

**Gaining attention (5-7 minutes)**

Welcome students to class. Review the wetland, desert, and forest posters that are on the wall from the previous lesson. After this review the interactive power point that highlights the environments of Utah.

**Direction** (stating objectives) **(1 minute)**

Today you are going to locate the various environments in Utah that have the characteristics of wetlands, forests, or deserts and color them in on a map of Utah. Write the objective on the board and have the students read it with you.

**Recall** (recall of prerequisite information) **(7-10 minutes)**

Explain to students that in Utah, elevation directly influences the temperature and amount of rain an area receives. The higher the elevation the cooler the temperatures and more rain an area will receive. The lower the elevation the less rain and warmer the temperature will be. Plants like certain temperatures and amounts of precipitation. They will only grow if the environment is just right for them. Animals need the right plants, temperature, and moisture so they can live in their environments as well.

* + Ask the students, based on what you discussed, which plants and animals they think live in Utah’s habitats; forests, deserts, and wetlands.
  + Divide the class in three groups. Then assign each group an environment to predict plants and animals that live there.
  + Assign a scribe or writer for each group and have the scribe write down the plants and animals the group predicted on the large chart paper.
  + As a class discuss the charts.

**Content** (presentation of new material) **(10 minutes)**

As a class decide...

* + What habitat is most likely to be lowest in elevation: deserts or forests?
  + What will most likely be the highest in elevation: deserts or forests?
  + What environment can be at any elevation? Why?
  + Why can a wetland be at any elevation?

Record this information on the board as it is discussed.

**Application feedback—level 1** (guided learning) **(15 minutes)**

Pass students a copy of the Utah Environment map. Place your copy under the document camera. Demonstrate the beginning of the process: green for forest areas, yellow for mountain forest/desert transition, brown for deserts, blue for wetlands. Allow the students to complete their own maps. Remind them that there are many wetland areas we cannot color because the areas are too small to show up on the map. A wetland is any area that has water or is wet. Discuss the colors on the map and have the students explain where they think the mountains and lowlands are, based on the environments in each area.

Have student pair up again and now write a summary with their partner.

Circulate around the room helping groups as needed.

Have the students hand in when they are done. Stop the writing the last 3 minutes of class in order to complete closure.

**Closure** (retention and transfer**) (5 minutes)**

Journal entry: Describe a wetland, forest, and desert. How does elevation effect each area? Discuss their journal entries and how this relates to the water cycle and the amount of moisture each elevation receives. Also discuss elevation changes and the impact it has on the temperature. Tell students that because of these terrains, Utah is divided into three areas: wetlands, forests, and deserts. Remind students to bring their shoeboxes for their project.

**Day Four**

**Gaining attention (5-7 minutes)**

Welcome students to class. Ask what students remember from yesterday. Prompt about elevation, and transition areas if needed. Record this information on the board for students to visually see. IF needed revisit altitude and make sure that the students have a concrete understanding of the concept.

**Direction** (stating objectives) **(2-3 minutes)**

Today you will be view pictures of Utah’s environments and classify orally areas of Utah that are generally identified as wetlands, forests, or deserts. Write the objective on the board and have the students read it with you.

**Recall** (recall of prerequisite information) **(7-10)**

Ask students: Name three plants that live in a wetland, and what adaptations the plants have that allows them to survive in that environment. Name three animals that live in a wetland, and what adaptations they have that allows them to survive in their environment. (Write Wetlands on the board and list out the plants and animals that are discussed.) Name three plants that live in a forest, and what adaptations the plants have that allows them to survive in that environment. Name three animals that live in a forest, and what adaptations they have that allows them to survive in their environment. (Write Forests on the board and list out the plants and animals that are discussed.) Name three plants that live in a desert, and what adaptations the plants have that allows them to survive in that environment. Name three animals that live in a desert, and what adaptations they have that allows them to survive in their environment. (Write Deserts on the board and list out the plants and animals that are discussed.) After this discuss transition areas, refer to yesterday’s map if needed. Discuss with the students how plants and animals from a certain environment can live in a transition area if it has the correct adaptation to survive there.

**Application feedback—level 1** (guided learning) **(15 minutes)**

Pass

**Content** (presentation of new material) **(10 minutes)**

Students will view 10 pictures of various Utah environments. These pictures will be labeled #1-#10. The student will number one to ten in their science notebook. They will then view pictures of environments and will determine and record which environment each picture is showing, in their science journals. Have all students number 1-10 in their science journals and display the pictures. You can tape the pictures up on the board, or use magnets so students can make choices at their own pace. After seven minutes students will then get with their elbow buddy and check their findings. If findings do not match up, students will put a question mark over the number.

**Closure** (retention and transfer) **(3-5 minutes)**

The students will then correct with teacher and numbers with question marks will be answered. Call on students to answer each number, when the student answers allow them to tell why the environment is what it is. Remind students to bring a shoebox for their project.

**Day Five**

**Gaining attention (3 minutes)**

What are adaptations have students give an example when they answer your question.

**Direction** (stating objectives) **(1 minute)**

Today we are going to identify animals that inhabit the particular environment. Write the objective on the board and have the students read it with you.

**Recall** (recall of prerequisite information) **(6 minutes)**

Ask students: What environments have we been learning about? Write wetlands, deserts, and forests on the board as they are mentioned. Ask what adaptations animals and plants may need to have to survive in that environment. List on the board as adaptations are listed. While you are doing this refer to the posters of Utah environments, notice the plants and animals that are in the 3 posters

**Content** (presentation of new material) **(35 minutes)**

Have students take out their science journals and number 1-12. While the PowerPoint is being viewed by the students and you are presenting and elaborating on the information, every time there is a line under the word the students needs to write that word down in their science journal. Start adaptations PowerPoint pausing when information needs to be written down.

**Closure** (retention and transfer) **(6 minutes)**

Ask students: to read through the words that they have written down in their journal, and clarify words that they need help with. Remind students that they will need a shoebox for a project in two days.

Day Six

**Gaining attention (3 minutes)**

Ask students to tell you about their favorite environment and why. List responses

on the board for students to visually see.

**Direction** (stating objectives) **(1 minutes)**

Today we are going to review and assess what we have learned throughout the unit.

**Recall** (recall of prerequisite information) **(3 minutes)**

Ask students: What are we learning about? (Utah Environments) What are they? Tell me a few plants and animals that live in each one. What adaptations have they had to make to survive in that particular environment?

**Application feedback—level 1** (guided learning) **(18 minutes)**

View Cave, Canyon, Desert: Utah’s National Parks on YouTube. With your worksheets from the packet, and your science journals for reference you will write a summary about the Utah environments unit. Remember there is not a magic number of sentences. Combine information so that you have nice interesting sentences and not short choppy ones. You may select a partner to work with. You will have 15 minutes so work quickly. Neat, legible cursive handwriting too!

**Application feedback—level 3** (feedback) **(5 minutes)**

Partner with another pair and read each other’s writing.

**Evaluation** (assessment) **(5 minutes)**

Evaluate your summary now that you read someone else’s. Add anything you like to your summary to make it clearer, or better. Hand in when finished

**Closure** (retention and transfer) **(6 minutes)**

What have we been learning about? (Utah Environments) What are the three? Refer to posters.

Ask: Think about your favorite environment for tomorrow’s class. Be prepared with five plants and five animals that live there. Ask students to bring a shoebox to the next class for our project.

Day Seven

**Gaining attention (3 minutes)**

Ask to take out their science journals and write 3 sentences about their favorite environment.

**Direction** (stating objectives) **(1 minutes)**

Today we are going to review and assess what we have learned throughout the unit. You will begin your habitat diorama today in class and finish at home.

**Recall** (recall of prerequisite information) **(3 minutes)**

Ask students: What are we learning about? (Utah Environments) What are they? Tell me a few plants and animals that live in each one. What adaptations have they had to make to survive in that particular environment?

**Application feedback—level 1** (guided learning) **(18 minutes)**

Ask students to select their environment that they want to do their diorama on. Write down five animals and plants that they want to include in their diorama. Allows students to use paper scraps and paper to start drawing and coloring their plants and animals. Show them how to make these 3D, they should know but just incase they forgot. Allow them time to start on their dioramas. If students forgot their shoeboxes they can make their plants and animals.

**Application feedback—level 3** (feedback) **(5 minutes)**

Partner up with another person who has the same environment as them and have them compare the plants and animals that they have selected.

**Evaluation** (assessment) **(5 minutes)**

Go over the rubric for the grading of their diorama

**Closure** (retention and transfer) **(6 minutes)**

What have we been learning about? (Utah Environments) What are the three? Refer to posters.

Ask: Think about your favorite environment for tomorrow’s class. Be prepared with five plants and five animals that live there. Remind them that their dioramas are due per the rubric.