I. Utah State Core Curriculum Standard(s)
   a. Understand: Standard 1—Students will understand the relationship between the physical geography in Utah and human life.

II. Lesson Objective(s)/Goal(s)
   b. Do: 2.a. Identify population concentrations in the state and infer casual relationships between population and physical geography. 2.e. Examine the interactions between physical geography and public health and safety (e.g. inversions). 3.a. Describe how and why humans have changed the physical environment of Utah to meet their needs (e.g. reservoirs, cities). 3.b. Explain viewpoints regarding environmental issues (e.g. land use).

III. Preparation (teacher materials, student materials, etc.):
   a. Teacher: power point, laptop, projector, CD player, song, informational packets about the railroad and lake effect
   b. Student: lyrics to song, paper and pencil, exit card

IV. Technology Use:
   a. CD player, projector hooked up to laptop

V. Instructional Procedures:
   a. Sing Utah song.
   b. Pre-assessment: Ask, “Where do most people live in Utah?”
   c. Explain the task.
      i. Inform students to put on detective hats (pantomime). They are now detectives and will be working as tables discussing two very important questions: the beginning question about where most people in Utah live and one question I will ask about the power point I will show them.
      ii. As a table they are to come up with their best answer, write it down and present to the class. Each member of the group needs to write down their
name on the group paper. Inform class that they will be turning in the paper for a shared grade. They will also be filling out a group work exit card where they will score each group members on their contribution to the group.

d. Identify critical social skills.

i. Remind students of the importance of supporting each other when working as a group. Positive, supporting behaviors include eye contact, praise and leaning forward.

e. Show power point slide of Lake Bonneville

i. Teach about the ancient lake and how it used to fill in the land that was later pulled apart when the plates moved away from each other and then the basins were formed. Most of the water has dried up except for the Salt Lake.

1. Show the lake landform slide and ask students if they know why the lake in the satellite picture is two different colors.

2. Ask for volunteers to give their answer.

3. Pass out informational packets about the railroad and lake effect.

4. “This is your first detective question.” (#1), “In what way does the man made railroad affect the physical environment of Utah?”

5. Give the groups 6 minutes to read and write down their response.

f. Monitor and provide descriptive feedback during group work.

g. Ask each group to summarize/Evaluate.

i. Ask for volunteer groups to present their answers. Answers should specify lake effect and different salt content on each side of lake.

h. Formative Assessment: Observe student cooperative groups for student participation and accurate discussion.

i. Show the population map transparency and teach what all the colors represent.

1. “I am going to show you two more pictures and you need to work with your group figuring out the second detective question.” (#2) “Why do most of the state’s people live in up near the Wasatch Mountains?” Remember to look at the Regions Map we just created that has many pictures of landforms found in our state for help in answering this question. Your answers need to be half a page in length and give one example each of how agriculture and water make a difference. Before you get started, here are the two pictures that will help:"

ii. Show/Discuss the temperature map and teach what the colors represent.

1. How does the temperature affect the landforms and where we live?
   a. Teacher information
      i. Agriculture—need land for animals to graze.
      ii. Resources—water, lumber, farming soil are not in places that are hot.

iii. Show/Discuss the rainfall map and teach what the colors represent.

1. How does rainfall affect the landforms and where we live?
a. Teacher information
   i. We live where there is enough rainfall to fill our rivers and lakes. Farmers use this water to water their crops and feed their animals. We need the water for drinking and in our homes.
   ii. Water feeds the vegetation like trees, bushes and grass. We need trees for building homes.
   iv. Refer to yesterday’s lesson on landforms and erosion. The mountain region of our state has many streams that all flow into either Salt Lake or Utah lake. The rivers carry water which farmers can direct through irrigation to their farms so we can have food. The soil is very rich and fertile because of erosion of the mountain and the deposits that the streams carry.
   v. Explain that much of the land in Utah is not for sale (land use—governmental land protection and species protection). We have five national parks and many state parks. This land is protected to help preserve it and the animals that live there.
   vi. Repeat question #2 and give students 6 minutes to write down their response.

j. Monitor and provide descriptive feedback during group work.
k. Ask each group to summarize/Evaluate.
i. Student groups present their answers.
l. Assess group process.
i. Discuss the cooperative learning group experience with the class. Ask students to complete an exit card where they will score members of their group for participation points.

VI. Accommodation(s) for Diverse Learner(s): Minimal teacher lecturing, hands on activity with visual pictures.

VII. Evaluation of Student Progress
a. Pre-assessment—Ask, “Where do most people live in Utah?”
b. Formative assessment—Observe student cooperative groups for student participation and accurate discussion.
c. Post assessment—Students will complete two group assignments where they work together to answer following two questions.
i. Question #1 “In what way does the manmade railroad affect the physical environment of Utah?” Answers should be half page in length and specify both lake effect and different salt content on each side of lake. 5 points possible
ii. Question #2 Look for half page response to the question, “Why do most of the state’s people live in up near the Wasatch Mountains?” Student’s answers need to give one example each of how agriculture, water, and land use make a difference. 5 points possible
Power Point slides from Utah Atlas by Craig & Carr