Teacher Survey

Instructions: Please complete the following evaluation.

1. Did you make any adjustments to the learning module? If so, what did you change or omit?

2. From your observations, are the students more interested in atmospheric science?

3. What part of the lesson was most effective or interesting to them?

4. What concept did the students have most trouble understanding or applying?

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Student Survey

Please distribute this survey to the students before and after completing the module.

Instructions: Circle the answer that best describes your feelings about science.

1. I like science.
    a. I strongly disagree.
    b. I disagree.
    c. I am indifferent or unsure.
    d. I agree.
    e. I strongly agree.

2. How often do you talk to your *family* about what you do in science class?
    a. Never
    b. Rarely (less than once a week)
    c. Once a week
    d. A few times a week
    e. Every day

3. How often do you talk to your *friends* about what you do in science class?
    a. Never
    b. Rarely (less than once a week)
    c. Once a week
    d. A few times a week
    e. Every day

4. I think science will be useful when I am older.
    a. I strongly disagree.
    b. I disagree.
    c. I am indifferent or unsure.
    d. I agree.
    e. I strongly agree.

5. I would like to be a scientist when I am older.
    a. I strongly disagree.
    b. I disagree.
    c. I am indifferent or unsure.
    d. I agree.
    e. I strongly agree.

Effectiveness Assessment

Part 1: Pre and Post Assessment (Student Evaluation)

Instructions: Please distribute and score the **Student Evaluation** for each student before and after completing the module. Each question is worth 1 point.

Student Evaluation

Instructions: After completing the lesson on flooding, please have the students answer the following questions below.

1. Flooding occurs in every state across the U.S. T F

2. Flooding is one of the most deadly weather phenomena. T F

3. It takes 5 feet of water to wash away a full size vehicle. T F

4. Which of the following regions is most prone to coastal flooding?
    a. Topeka, KS
    b. New Orleans, LA
    c. Phoenix, AZ
    d. St. Louis, MO

5. Which of the following regions is most prone to widespread flooding?
    a. Topeka, KS
    b. New Orleans, LA
    c. Phoenix, AZ
    d. St. Louis, MO

6. Which of the following regions is most prone to flash flooding?
    a. Topeka, KS
    b. New Orleans, LA
    c. Phoenix, AZ
    d. St. Louis, MO

7. What instrument helps meteorologists measure precipitation intensity and 1-hour rainfall totals?
    a. Satellite
    b. Rain gauge
    c. River height gauge
    d. Doppler radar

8. What is a training thunderstorm?
    a. Several storms that line up and repeatedly produce immense amounts of precipitation in one area
    b. A single storm that moves very quick like a train
    c. A storm that precedes the official start of thunderstorm season
    d. Any thunderstorm that causes widespread flooding across state borders

9. Name three types of weather events that lead to flooding and the type of flooding that they are associated with.

10. What is the probability of occurrence of a 125-year flood during any given year?
    a. 0.008%
    b. 0.08%
    c. 0.8%
    d. 8%

Part 2: Math & Science Proficiency (Take Home Assignment: Part 1)

Please score **Take Home Assignment**: **Part 1** for each student using the rubric below. This problem is aligned with the following academic standard:

CCSS.MATH.CONTENT.7.SP.C.5
Grade 7: Statistics and Probability: Investigate chance processes and develop, use, and evaluate probability models.

Scoring Rubric

Questions	Score (0 – 3)
Did the student properly identify the Mississippi River on the map?	
Did the student properly identify the types of flooding that they would experience based on their geographic location (Q3)?	
Did the student demonstrate knowledge of calculating probabilities (Q4)?	
Did the student include the correct units for probability (Q4)?	
Did the student demonstrate knowledge of relating probability to the chance an event will occur (Q5)?	

0 – Incomplete
1 – Completed with incorrect answer
2 – Complete with small errors
3 – Complete with correct answer

Take Home Assignment: Part 1. U.S. River System

Instructions: Click the link below and scroll through the activity slides to learn more about the U.S. River System and watersheds. Draw and label the location of the Mississippi River on the U.S. map and answer the following questions.

U.S. River System (National Geographic)

Questions

1. How many watersheds are there in the United States?

2. What is the name of the watershed in which you live?

3. What type(s) of flooding do you expect to typically occur in your watershed? Explain your reasoning.

4. A 500-year flood has a 0.2% chance of occurring on any given year. Using the probability of occurrence example for a 500-year flood below, what is the probability that a 25-year flood will occur next year?

   Example: Probability of Occurrence = 1/500 x 100% = 0.2%

5. Which has a greater chance of happening: a 25-year or a 50-year flood? Briefly explain your reasoning.

6. Which is more severe: a 25-year or a 50-year flood?