Refreshing Mountain - Homeschool Day Educational Packet

This packet includes pre-visit prompts, on-site worksheets, reflection forms, and a record-keeping log designed to make your day at Refreshing Mountain both fun and academically meaningful.

Learning Objectives (Cross-Curricular)

• **Science**: Investigate forces and motion through zipline physics; observe ecosystems and animals; explore plant identification.

• **Math**: Apply measurement, estimation, angles, and basic data collection to archery, sling shots, obstacle challenges, and timed activities.

• **ELA**: Practice notetaking, descriptive writing, and oral communication.

• **Health/PE**: Develop coordination, balance, and fitness; reflect on personal goal setting and safety protocols.

Student Name _____ **Date** _____

Worksheet 1: Zipline Physics - Forces & Motion

Speed - The rate at which an object's position changes, measured in meters per second.

Velocity - A vector quantity describing how fast an object is moving and in what specific direction, combining speed with directional information.

Acceleration - The measure of change in velocity over time.

Friction - A contact force that resists movement.

1) Predict: Before riding the zipline, circle what you expect to feel most:

- Acceleration • Constant Speed • Deceleration.

2) Measure: Circle your zipline course below and ask your guide to point out which line on the course has the longest cable length.

- Homeschool Adventure 2) Flying-V Zipline longest cable: *Approximately* 400ft
- Homeschool Adventure 3) Challenge Adventure longest cable: *Approximately* 500ft

3) Time: Use a stopwatch to record ride time on your zipline course's longest cable:

4) Calculate: Average speed = cable length ÷ ride time.

5) What factors may have an influence on how fast or slow someone rides on the zipline? (Friction of the trolley, weight, wind direction, wind speed…)

6) Observe: Where did you feel friction? What evidence?

Worksheet 2: Archery / Sling Shots - Math & Angles

1) Measure: Take note of the distance to target.

- Sling Shots: 40ft
- Archery: 50ft

2) Estimate the angle of your bow/sling shot arm relative to the ground for five shots. Record scores for these five shots and fill in the table. Compute the mean and median.

Mean: Add all numbers in a data set and divide by the total count of numbers.

Median: Arrange the data in numerical order (ascending) and identify the middle value. If there is an even number of values, average the two middle numbers.

Sling Shots

Shot #	Score	Estimated Angle (°)	Notes
1			
2			
3			
4			
5			

Archery

Shot #	Score	Estimated Angle (°)	Notes
1			
2			
3			
4			
5			

3) Reflect: How do changes in angle affect accuracy?

Worksheet 3: Nature & Ecology Scavenger Hunt

Find and document the following:

1) Draw a leaf with serrated edges.

2) Draw or describe evidence of an animal (track, nest, scat).

3) Describe 3 different birds of prey calls.

4) Draw or describe a decomposer (fungus or insect) and its role.

5) Draw or describe two native trees. Note their bark texture and leaf shape.

Worksheet 4: Reptiles & Amphibians Observation Journal

Species	Features	Behavior Observed	Natural Habitat

Student Reflection Form

1) Today I learned… (write 3 sentences)

2) One question I still have is…

3) Today's activities connect to topics I study at home by…

REFRESHING MOUNTAIN

Field Trip Record-Keeping Log

Date	Activity	Subjects Covered	Hours	Parent/Instructor Notes