Scratch Project Worksheet: "Save the Forest" Game

Objective:

Create a game in Scratch where the player helps protect the environment by cleaning up pollution, saving animals, and planting trees. Learn about the effects of pollution and deforestation, and how small actions can help save the environment.

Step 1: Game Planning

Before you start coding, let's plan your game! Answer these questions to help shape your project.

1. **What is the main character of your game?**
    - Example: A tree, a forest ranger, a bear, etc.

    Your idea:

2. **What are the different environmental threats in your game?**
    - Example: Litter, pollution, forest fires, deforestation.

    Your idea:

3. **How will the player help the environment?**
    - Example: Picking up litter, rescuing animals, planting trees.

    Your idea:

4. **What will the player have to do to win the game?**
    - Example: Reach a certain score, clean up all the pollution, plant all the trees.

    Your idea:

Step 2: Create the Sprites and Backdrops

Now, let's start building the environment in Scratch.

1. **Choose or create sprites for:**
    - The main character
    - Pollution (like plastic bottles, cans, etc.)
    - Animals that need saving
    - Trees (for planting or protecting)
    - Environmental hazards (like fires or dangerous animals)
2. **Design your backdrops:**
    - Create different scenes for the game, such as a clean forest, a polluted forest, and a restored forest.

Step 3: Set Up Your Game Mechanics

Let's start programming your game.

1. **Player Movement:**
    - Use the arrow keys or mouse to move your character around.
    - Program your character to interact with the environment (e.g., pick up litter or save animals).
2. **Scoring:**
    - Add a variable to keep track of the player's score. Increase points for positive actions like cleaning or rescuing, and decrease points for mistakes (e.g., polluting more).
3. **Threats and Challenges:**
    - Create events that bring in environmental threats (e.g., a pollution cloud appears, or a forest fire starts).
    - Make sure the player has to act quickly to prevent damage.

Step 4: Add Fun Features

Make your game more fun and educational!

1. **Level System:**
    - Create different levels where the difficulty increases (more pollution, more animals to save, etc.).
2. **Fun Facts:**
    - After each level, show a fun fact about environmental protection (e.g., "Plastic takes hundreds of years to decompose!").
3. **Leaderboards:**
    - Keep track of the highest scores to encourage friendly competition.

Step 5: Test and Share

Test your game to make sure everything works as expected. Try to play through all levels and make sure the environmental facts show up correctly.

1. **Does your game teach the player about the environment?**
2. **Are the actions easy to understand?**
3. **Is it fun to play?**

Once you're happy with your game, share it with your friends and family!

Reflection:

- **What did you learn about the environment while making this game?**
- **How can you apply these lessons to your daily life?**