GROUP PREVIEW • Tree Power

Name _____ Date _____ Group _____

Your class has been studying air pollution. Carbon dioxide (CO_2) is a major contributor to air pollution. Trees absorb CO_2 and release clean oxygen into the air through the process of *photosynthesis*. The CO_2 remains inside the tree, which helps to reduce the amount of CO_2 in the air.

Read the facts about trees and recycling paper.

Tree Facts

- One tree can absorb 48 pounds of CO_2 each year.
- Recycling 1 ton of paper saves 17 trees.

Conversions

1 ton is equal to 2,000 pounds.

1. Discuss with your group: Why might recycling paper save trees?

2. Discuss with your group: What absorbs more CO_2—recycling 1 ton of paper or planting 1 tree? Why?

3. How many tons of CO_2 are equal to 6,000 pounds?

INDIVIDUAL PERFORMANCE TASK • Tree Power

Name _____ Date _____

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Read the facts about trees and recycling paper.

Tree Facts

- One tree can absorb 48 pounds of CO_2 each year.
- Recycling 1 ton of paper saves 17 trees.

Class Goal

- Recycle paper and plant trees so that a total of 6,000 pounds of CO_2 is absorbed in 1 year.

Conversions

- 1 ton is equal to 2,000 pounds

Your task is to determine an expression that any class could use to figure out how many pounds of CO_2 they have saved from recycling paper and planting trees.

1. How many trees can be saved if 3 tons of paper is recycled?

   _____ trees

2. Juan claims that 100 **pounds** of paper needs to be recycled to save 1 tree.
   Do you agree or disagree with Juan's claim? Justify your decision.

3. Which option would result in the greatest amount of absorption of CO_2?

   - Option A: Plant 10 trees.
   - Option B: Recycle $\frac{1}{2}$ ton of paper.

   Justify your decision.

4. Your class has collected 5 tons of paper for recycling. Write an expression to represent each
   situation below.

Situation	Expression
Trees saved from recycling 5 tons of paper	
Pounds of CO_2 absorbed by these trees in 1 year	
Pounds of CO_2 still needed to be absorbed for the class to reach the class goal	

5. Create an expression that classes can use to determine how many pounds of CO_2 would be saved in 1 year from planting **any** number of trees (t) and recycling **any** number of tons of paper (p).