FACTivity

Time Needed

Two class periods: 15 minutes for the first period, 30 minutes for the second period

Materials

- Shoe box, hat, or other similar-sized container.
- The math quizzes on pages 25 and 26. (Each student should have one quiz.)
- Copies of the photo on page 27. (One-half of the students will have a photograph. Your teacher may copy the page on cardstock and cut it to create four photos.)

FACTivity answers are given on page 32.

In this research, you learned that people often plant trees and flowers to remember a person or an event during which someone died or something was lost. The scientists found that planting a tree or a plant appears to give people comfort and strength. The trees and plants provided a benefit to the people doing the planting.

Dr. Roger Ulrich is a social scientist who studies what effect natural environments have on people. He found, for example, that hospital patients with a natural scene outside their window recovered more quickly than people who had a wall or building outside their hospital window. Dr. Ulrich found that adding flowers and plants to an office helped increase people's productivity. He found that people felt less stress when they could view natural landscapes or plants. The natural scenes, plants, and flowers provided a benefit to the people viewing them.

In this FACTivity, you will answer the following question: Does viewing a photograph of a flower provide a benefit to students taking a math quiz? The following are methods you will use to answer this question.

Your teacher will count the total number of students in the class. Along with the other students, write your name on a piece of paper, fold it over, and place it in the box. With the other students, draw out one-half of the total number of student names. One-half of the class will be called the green group (the ones whose names had been drawn out of the box).

The other half will be called the blue group. As an option, you and the other students may name your group.

Your teacher will give each student a copy of the first math quiz. You will be given 5 minutes to complete the quiz. The teacher will collect the quizzes, organize them by group, and put them away until the next class. The class will not score the quizzes now.

Your teacher will give each member of the green group a photograph (page 27). If you are in the green group, keep the photograph with you until the next science class. Keep the photo handy and look at it at least once every 2 hours. If possible, this FACTivity should include time spent outside of school.

In the first 5 minutes of the next class, take the second quiz. With your teacher, score both the first quiz and the second quiz by group. Calculate the overall percentage of correct answers for each group and each quiz. Four sets of percentages should be available for analysis. Compare the scores of each group by completing the following table:

	Percentage of Correct Answers	
	Blue Group	Green Group
Quiz 1		
Quiz 2		

According to the research in this article and Dr. Ulrich's research, trees, plants, and flowers provide benefits to people.

Answer the following questions as a class or in small groups.

1. Are the group scores on the first quiz about equal? Should they be about equal? Why?

2. How does the math quiz score compare with the concept of productivity? Are math ability and productivity the same thing? Why or why not?

3. If there is no difference or the scores are lower for the green group's second quiz, what could be some possible explanations?

4. If the green group's second quiz scores are higher than before and higher than the blue group's, what could be some possible explanations?

5. Did the flower photograph provide a benefit to the green group? How do you know?

6. How could you improve this experiment? Think about repetition, numbers of students, real experience in or views of the outdoors, and time. Now take 5 minutes in a class discussion to compare the class research with the research in this article and with Dr. Ulrich's research. What are the similarities in the role played by plants and people in each case? What are the differences?

Math Quiz #1

Group name:_____

In 6,251, in which place is the 5?

___ones

___tens

___hundreds

___thousands

What number does this Roman numeral represent?
XXVI

_____

How do you write 0.08 in words?

___eight-thousandths

___eight-tenths

___eight ten-thousandths

___eight-hundredths

Which sign makes the sentence true?
0.87 ? 0.43

___<

___>

Which integer represents this scenario?
Three new selections are added to the school lunch menu.

___−3

___ 3

Write the expression using an exponent.
3 X 3

_____

What is $\sqrt{25}$?
_____

Multiply:

$34.00 X 0.8 = _____

Chris played a video game with three levels. It took Chris 2 hours and 10 minutes to beat the first level. It took Chris 1 hour and 45 minutes to beat the second level. Chris beat the final level in 1 hour and 10 minutes. Chris stopped playing at 5:00 p.m. Assuming that Chris did not take any breaks, what time did Chris start playing the game? Include a.m. or p.m. in your answer.

_____

Juan Carlos interviewed the last two athletes to finish a bike race. Is this poll a random sample of the athletes in the bike race?

___Yes

___No

Math Quiz #2

Group name:_____

How do you write 0.012 in words?

___twelve-hundredths

___twelve-thousandths

___twelve-ten-thousandths

___twelve-tenths

Which integer represents this scenario from Juan Carlos' perspective?

Juan Carlos gave an apple to his friend.

___ 1

___ −1

Is this sentence true or false?

31 > 27

___True

___False

Write out this expression using an exponent: 4 X 4 X 4

_____

In 32,421, in which place is the 3?

___one-hundred thousands

___hundreds

___ten-thousands

___thousands

Write 15 as a Roman numeral.

_____

Shanda interviewed four students after pulling their names from a box containing all student names.
Is this poll a random sample of students?

___Yes

___No

What is $\sqrt{36}$?

_____

Multiply 10.01 X 0.5 =

_____

Li-Hua lives in a time zone 6 hours behind UTC/GMT (Coordinated Universal Time/Greenwich Mean Time). When it is late evening UTC/GMT, it is mid-afternoon at Li-Hua's home. If it is 2 p.m. UTC/GMT, what time is it where Li-Hua lives? Be sure to add "a.m." or "p.m." in your answer.

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