Exploring the World of Math

Name: _____ Date: _____

Sample Spaces

1. A business manager wants to inspect two stores this year. We will call the stores X and Y. What are all the combinations that we can visit the stores?

2. A business manager wants to inspect three stores this year. We will call the stores 1, 2, and 3. What are all the combinations that we can visit the stores?

3. A storeowner has four paintings to display. We call the five paintings A, B, C, and D. What are all the combinations that we can arrange the paintings?

Tree Diagrams

4. Create a diagram showing the combinations of sunny days for three days.

5. What is the probability of having all sunny days?

6. What is the probability of not having a sunny day?

7. Create a diagram showing the combinations of offspring from a woman having four children.

8. What is the probability of having all males?

9. What is the probability of having three females?

10. What is the probability of having only two males?

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Combinations

11. A person orders a double dip ice cream from a dairy farm that serves 25 different flavors. How many days can we visit the dairy farm before repeating any combination?

12. Another person orders a triple dip ice cream from a dairy farm that serves 25 different flavors. How many days can we visit the dairy farm before repeating any combination?

13. How many 6-character passwords can we make from 26 capital letters, 26 lower case letters, 10 numbers, and 8 special characters?

Sampling

14. We tagged 50 color beans in the box. Remove a small number beans and count them. Record the color beans and the total beans. Place them back in the jar and shake them up. Repeat the experiment two more times. Record each result.

_____Color beans + _____Color beans + _____Color beans = _____Color beans
_____Total beans + _____Total beans + _____Total beans = _____Total beans

$$\frac{\_\_\text{color beans}}{\_\_\ \text{total beans}} = \frac{50\ \text{color beans}}{\text{N total beans}}$$