AGENDA

Warm-Up

Enter Spring Packet Solutions

Cornell Notes:

Understanding Sampling

Pair-Share-Discuss

Warm Up #26

Try to complete all 5 without a calculator.

1) $-3(5x - 4y + 6) =$

7.NS.2a

2) Convert 5/6 to a decimal using long division.

7.NS.2d

3) A clothing store buys a dress for $30.00 and then adds a 75% markup to the price. How much will the dress sell for in the store?

7.RP.3

4) If a right rectangular prism is sliced with a plane parallel to its base, what shape would be formed?

7.G.3

5) One hundred fans are asked to name their favorite team as they enter a major league baseball stadium. Is this a representative sample of baseball fans?

7.SP.1

Topic: Understanding Sampling	Lesson Essential Question: How can we use the properties of distributions to describe the variability in a given data set?
	KEY VOCABULARY
Population	**a group of individuals or objects that you may want to study.**
Sample	**collected data from part of a larger population**
Two types of samples	**Random Sample: every member of a population has an equal chance of being selected.** **Random samples** are often representative (or a representation) of the whole population. **Biased Sample: where some members of a population are more likely to be chosen than others.**

Consider this survey, Nina wants to know how the students in her school feel about the new dress code. She randomly selects the names of 100 students from a school list and emails each of them a survey.

She waits for responses and records data from surveys that are returned to her. Is her sample biased?

Hint #1

Consider how Nina chose the students to whom she e-mailed the survey.

Hint #2

Think about the data she received and recorded.

Did she receive surveys back from every student she e-mailed?

Consider this survey, Tripp wants to know how the students in his school feel about the new dress code. He surveys all the students in his homeroom.

Is his survey biased? If it is, what could he have done differently to make it representative?

Hint #1

Did everyone in the school have a chance of being selected?

Hint #2

Is there another way where every student in his school would have an equal chance of being selected?

A researcher chose a random sample of registered voters in Kentsville. He found that 3 out of every 5 voters surveyed said they would vote for Miguel Miller for mayor.

If there were 800 eligible voters in Kentsville, predict how many of those voters will choose Miguel Miller for mayor.

Why would this be a valid inference to draw from these data?

Was the chosen

Hint #1

How many voters will vote for Miguel Miller in the genreal election?

Hint #2

THINK-PAIR-SHARE

Practice

Identify each sample as *random* or *not random*. Assume that the population to be studied is all students in a school.

1. Sam surveys every student in the school band.

2. Sam surveys every 8th student as the students arrive in the cafeteria.

Fill in each blank with an appropriate word or phrase.

3. A _____ is the group of people or objects that a researcher wants to study.

4. If a population is very large, a _____ of that population is selected and studied instead.

5. In a _____ sample, every member of a population has an equal chance of being selected.

6. In a _____ sample, some members of a population have a greater chance of being selected than others.

7. If a sample is representative of a population, data obtained from the sample can be used to make _____ about the larger population.

Khalid wants to find out if most students at his middle school would support using school money to buy new football equipment. Decide if each way of choosing a sample will result in a sample that is either representative or biased/flawed. If the sample is biased or flawed, explain why.

8. Khalid surveys every student attending a school football game.

9. Khalid surveys every 10th student entering the cafeteria during seventh-grade lunch.

10. Khalid selects the names of 50 students at random from a school directory and surveys them.

11. Khalid hands out surveys to 100 randomly chosen students, and he scores the surveys that are returned to him.

Solve.

12. Parents of students at a middle school were randomly selected to participate in a survey. Thirty-one out of 50 parents who were surveyed support extending the school day. There are a total of 420 parents with children at the middle school. Predict how many of those parents are likely to support extending the school day. Show your work.

13. Lindsey wants to find out, on average, how many hours per week seventh-grade students at her school spend studying. She decided to survey the students sitting in her social studies class to find out. Is her sample likely to be representative of all seventh-grade students at her school? Why or why not?

14. Oliver wants to know the mean number of pages in novels in his seventh-grade classroom. He randomly chooses 20 novels from his classroom library and records the total number of pages in each. His data are below.

180	150	200	212	232	300	290	175	210	234
240	199	160	150	178	290	212	205	205	170

Predict the mean number of pages in a novel in Oliver's classroom.

15. PREDICT Oliver asks his classmate Lilly to perform the same experiment he did. Lilly randomly chooses 20 novels from the classroom library and records the total number of pages in each. Her data are below.

212	199	220	160	278	200	290	175	300	180
200	150	200	154	152	210	224	205	215	160

Use Lilly's sample to predict the mean number of pages in a novel in Oliver's classroom. By how many pages does this prediction vary from Oliver's prediction? Explain why this variation is or is not reasonable.

Q4 Project

http://www.amathsdictionaryforkids.com/

This will be a good resource to use in order to create a math dictionary full of 25 most important terms you've studied this year.

It must include the name, a picture, the definition, and an example for each term.

You must use 3 x 5 index cards and a ring, string or yarn to bind them together.