

Name: _____

Date: _____

Cannibal Critters

"It's OK if you don't like them, just add milk and they eat each other"

Statistics and Predictions

The Acme Cereal Company has started producing this special edition cereal. The ingredients include some of the meanest, nastiest varmints alive today.

Watch out!

They may be hungrier than you.

Each package of cereal contains one of ten special edition cards. What are they worth?
Put them on EBay and find out

1. What is the average number of packages of cereal you would have to buy to get all 10 cards?

Pick a partner

Using your calculator and the equation: **randInt (0,9)**, hit enter to generate a random number. Continue until you have received all 10 cards. If you get a lot of duplicate numbers...start planning that trading party!

Record the number of times it takes to receive all 10 cards.

Each person should do 2 "trials" or generate sets of data. Record the number of tries for each card in the table below.

Enter the number of trials into your calculator in Lists L1 and L2 and calculate the 1-Var Stats.

Name	Tally	Frequency	Tally	Frequency

2. How could we change the equation used for the 'number generator' if we had 5 special cards?

3. What would be the average number of boxes needed to get all 5 cards?

4. How would you have to change the procedure to get a better estimate than you have now?

FOR THE TEACHER

Cannibal Critters

"It's OK if you don't like them just add milk and they eat each other"

Objective: Use the calculator to find the average for a set of data and make predictions based on the data.

NCTM Standards: Statistics; Mathematics as Problem Solving Statistics and Predictions

Using this Activity

** The exact equation needed to produce random numbers will vary depending on the calculator model being used.

Remind students of the meaning of Random Number, Integer and Average

A 'hat' with 10 colored marbles or balls may be helpful in illustrating the idea of random choices. A deck of cards works well also.

The application **Prob Sim** is an excellent way to let students generate data and explore it's meaning.

Encourage students to do as many trials as possible as this will improve the predictability of the data.

The students can find the average number of boxes by generating the average by hand or by using the lists and statistic menus in the calculator. Using these menus is a good way of extending the lesson to challenge the upper level student.

The random number operation generates numbers between 0 and 1. The random integer operation generates random integers in the range you set. You can have the calculator produce a predetermined amount of numbers.

MATH NUM CPX	rand	randInt(0,9)	randInt(0,9,25)
1:rand	.1905211687	8	{0 5 0 3 6 8 6 ...
2:nPr	.4284845338	7	
3:nCr	.9963051149	2	
4:!		4	
5:randInt(7	
6:randNorm(2	
7:randBin(

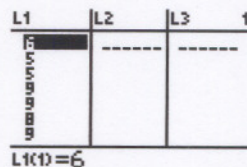
Answers







1. Averages will vary.
2. **randInt (0,5)**
3. Averages will vary.
4. Complete more trials.

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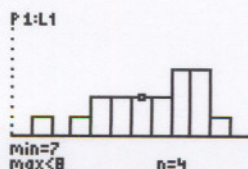
Date:

"Now that the meal is over what do we do with the bones?"

[illegible][illegible]

Plot2 Plot3
Off Off
Type:   
  
Xlist: L1
Freq: 1

```
WINDOW
Xmin=
Xmax=13
Xscl=1
Ymin=-3.30759
Ymax=12.87
Yscl=1
Xres=1
```



You can use trace to look at the frequency of each number.

FOR THE TEACHER

Cannibal Critters cont.

"Now that the meal is over what do we do with the bones?"

.....

Objective: Use calculator simulations to construct Histograms and make predictions based on the data.

NCTM Standards: Statistics;
Mathematics as Problem Solving
Statistics and Predictions

Using this Activity

** The exact equation needed to produce random numbers will vary depending on the calculator model being used.

Remind students of the meaning of Histogram, Distribution Curve, Theoretical and Experimental

The application **Prob Sim** is an excellent way to let students generate data and explore it's meaning.

Encourage students to do as many trials as possible as this will improve the predictability of the data.

You may want to use the TI-Navigator to collect the Histogram from each student to show their individual results.

TI-Smartview is also an excellent way to simulate the activity for the entire class.

Students can also use TI-GRAPH LINK cables to share their results among themselves and write narratives about the differences in the results.

Answers

1. Averages will vary until they start asking "which number".
2. No
3. Averages will vary.

Extension: Have the students generate 100, 200 rolls of the dice. Do they see any difference from the smaller samples?

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