

Repetitive throws of a fair die	Season	01
	Episode	10
	Time frame	1 period

Prerequisites : Statistics main measures

Objectives :

- Study an example of statistical data.
- Introduce the difference between probabilities and statistics.

Materials :

- *Dice.*
- *Graph paper.*
- *Slideshow.*

1 – Throwing the dice

30 mins

The class is divided in groups of four or five. Each group is given a set of dice.

Step 1 : Each student throws a die ten times, builds a frequency table and draws a relative frequency polygon, with scale 2 cm for 1 on the x -axis and 10 cm for 1 on the y -axis.

Step 2 : Each student throws a die a hundred times, builds a second frequency table and draws a relative frequency polygon on the same graph as step 1, with a different color.

Step 3 : Inside each group, results are gathered to build a third frequency table and draw a third relative frequency polygon, still on the same but using a third color.

Step 4 : In the whole class, results are gathered to build a fourth frequency table and draw a fourth relative frequency polygon, still on the same but using a third color.

2 – More throws

15 mins

Results are given for samples of 10 000 throws and 50 000 throws. Each student must then draw two new frequency polygons on the same graph.

3 – Discussion

10 mins

One possible set of graphs is shown and discussed. What's going on? What are the theoretical values.