

How many skips can we do in 30 seconds?

NEW June 2024

Year level: 4

Approximate number of lessons: 1 - 2

Learning goals

- Explore summary and comparison situations with discrete numerical data
- Plan how to collect primary data
- Create and describe data visualisations for summary and comparison investigations, for example frequency table, bar graph

Resources

- Skipping ropes
- Stop watches or clocks to time 30 seconds
- Paper and pencil to record times on
- [PPDAC one pager](#)

Activity

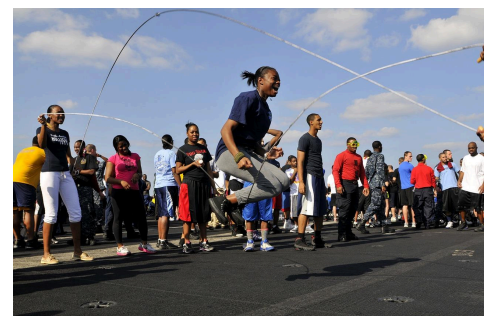
INTRODUCTION

In this activity students undertake a statistical enquiry about the number of skips they can do in 30 seconds. As this activity follows the PPDAC cycle, teachers could choose to use the [PPDAC one pager](#) for students to record their investigation as they go along.

? PROBLEM:

Pose the investigative question - **How many skips can we do in 30 seconds?**

- As a class, make predictions of outcomes and what they expect the highest and smallest number of skips in 30 seconds will be. Record these predictions to discuss at the end of the lesson. Discuss reasonableness of predictions - reasonable or unreasonable estimates.
- Are there any other variables that need to be considered, for example the ability of the students to skip, the length and quality of the skipping ropes, are girls better at skipping than boys.



📋 PLAN:

The planning section is about how students will collect the data. Discuss with students about their plan.

- How will they count and record the number of skips?
- Who will time them and how will they be timed?
- Will everyone use the same type of skipping rope? Does it matter?
- How will they record information about any other variables, and how do they define the variable
 - E.g., how would they define the ability of students to skip

Students work with a buddy/buddies and record the number of skips using pen and paper. This could include one student skipping, one student timing 30 seconds and the third student counting the number of skips. A timer will be provided and used to record 30 seconds.

Another plan could be to work in pairs, one student skips, the other counts, and the teacher times 30 seconds. The students swap places and the teacher times 30 seconds for the second person.

Questioning and clarifying: What constitutes a skip? How does the timer work?

Have they considered ethics?

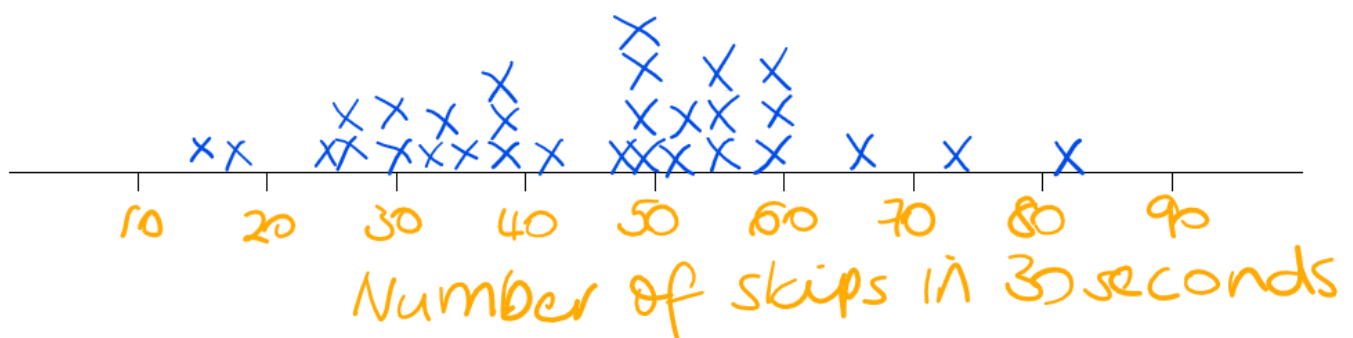
- People's permission is given
- Their data is safeguarded
- The data gathering does no harm to them

DATA:

The data will be collected by the buddy recording the number of skips completed in 30 seconds. Each student in the class will participate in the activity (remembering about permission being given, it is ok for a student to choose not to participate) and as a class the data/frequency will be gathered and recorded in a tally chart or frequency table.

▮ ANALYSIS:

Students make a data display of the number of skips in 30 seconds for the recorded data. A dot plot is a good option for displaying the data. Support students by modelling how to do this. Make the scale and then record the number of skips above the scale using a dot or cross.



Students write descriptive statements about the findings.

💡 CONCLUSION:

Answer the investigative question by choosing the best statements from the analysis.

Refer back to initial predictions - did the data match their original predictions? What did they notice or surprise them about the data collected?

Question: When and how could they compare their data to other Year 4 students?

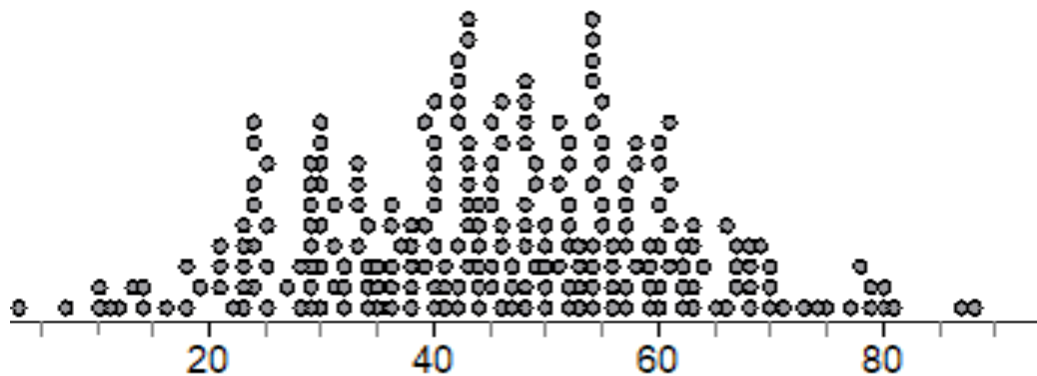
EXTENDING THE ACTIVITY:

Follow up lesson - Make comparisons of data at a later time of the year.
Compare data to other Year 4 classes in the school.

Notes for teachers

Students could write up their findings using this [PPDAC one pager](#).

The dot plot below is from the 2003 CensusAtSchool questionnaire. It shows the results of the **number of skips in 30 seconds** for a large group of students.



Number of skips in 30 seconds (Y4-8)

You could ask your students how the data for this group of students compares with their number of skips in 30 seconds.



Data Detective Poster