Spinning tops

Annotation

Jason can pose an investigative summary question (summarising his class data). He collects whole-number data and displays it using a dot plot. The dot plot enables him to analyse the data by looking at the plot's shape. He can draw a conclusion in context and answer his own investigative question.

Problem: Spinning tops

The students in Room 2 have been conducting fair tests in science. The teacher asks the students to complete the following task:

Pose a question for statistical investigation that uses the data from your fair tests and carry out your investigation.
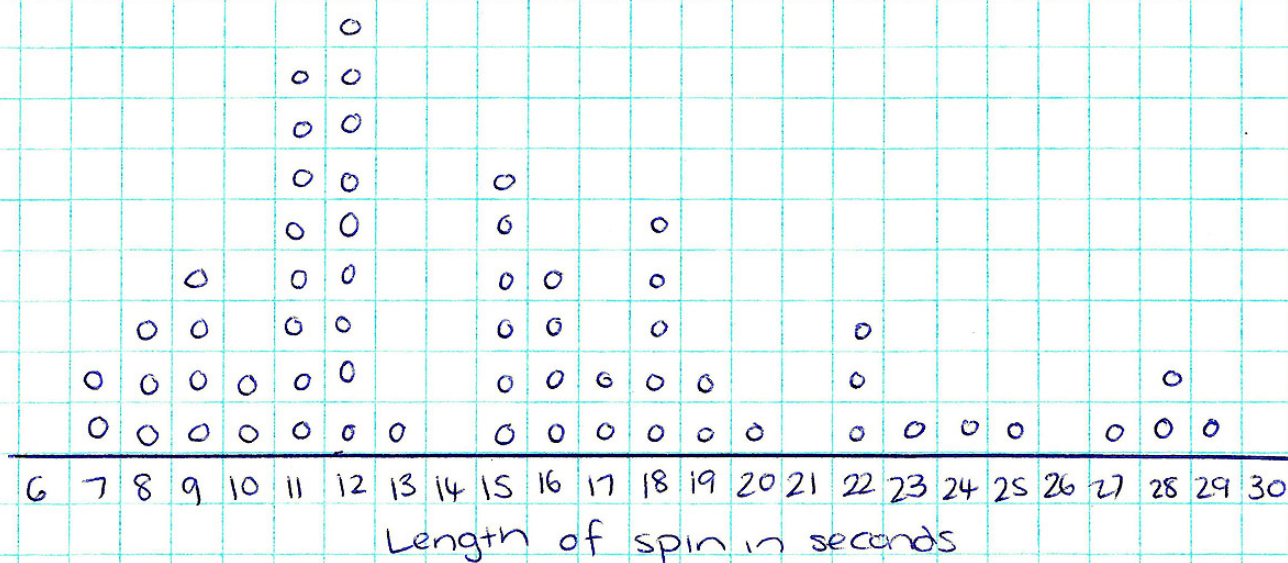
Student Response

Jason's work sample is as follows:

How long would a 'good' spin be with a spinning top in our class's fair tests?

Plan- Find out how long every spin of a spinning top from every group was in seconds.

8	11	8	9	12	28	16	25	27	18	18	18
24	23	9	10	11	8	15	29	11	12	28	15
22	17	12	12	18	12	16	20	18	13	15	17
12	11	10	12	15	11	11	7	16	15	19	22
9	15	11	11	7	12	16	19	22	9	12	

Graph of Spins of Spinning Tops in our class's fair tests

```
                      o
                  o   o
                  o   o
                  o   o       o
                  o   o       o           o
              o   o   o       o   o       o
          o   o   o   o       o   o       o           o
      o   o   o   o   o   o   o   o   o   o       o               o
      o   o   o   o   o   o   o   o   o   o   o   o   o   o   o   o   o   o
      6   7   8   9  10  11  12  13  14  15  16  17  18  19 20 21  22 23 24 25 26 27  28 29 30
```

Length of spin in seconds

Analysis- There were a lot of short spins of between 7 and 12 seconds and quite a lot of medium spins of 15 to 18 seconds. There were a few long spins of 22 to 29 sec.

Conclusion - A good spin in our class would be 22 seconds or more.

Teacher: Can you tell me what you did?

Jason:	I got every group to give me their data from their spinning-top fair tests, and then I made a dot plot.
Teacher:	Why did you do that?
Jason:	Because then I could see how long most of the spins were, and I would know what time a long spin would be.
Teacher:	What else did you do?
Jason:	I noticed that the graph had two bumps. There was a bunch of dots at the beginning for the short spins and another bunch in the middle for the medium spins. Then there were some longer spins spread out a bit further at the end.
Teacher:	What did you find out?
Jason:	That there were quite a lot of short spins and also medium spins but only a few really long ones. A spin of 30 seconds would be really, *really* good.
Teacher:	Could you have done it a different way?
Jason:	I could have made a bar graph instead.