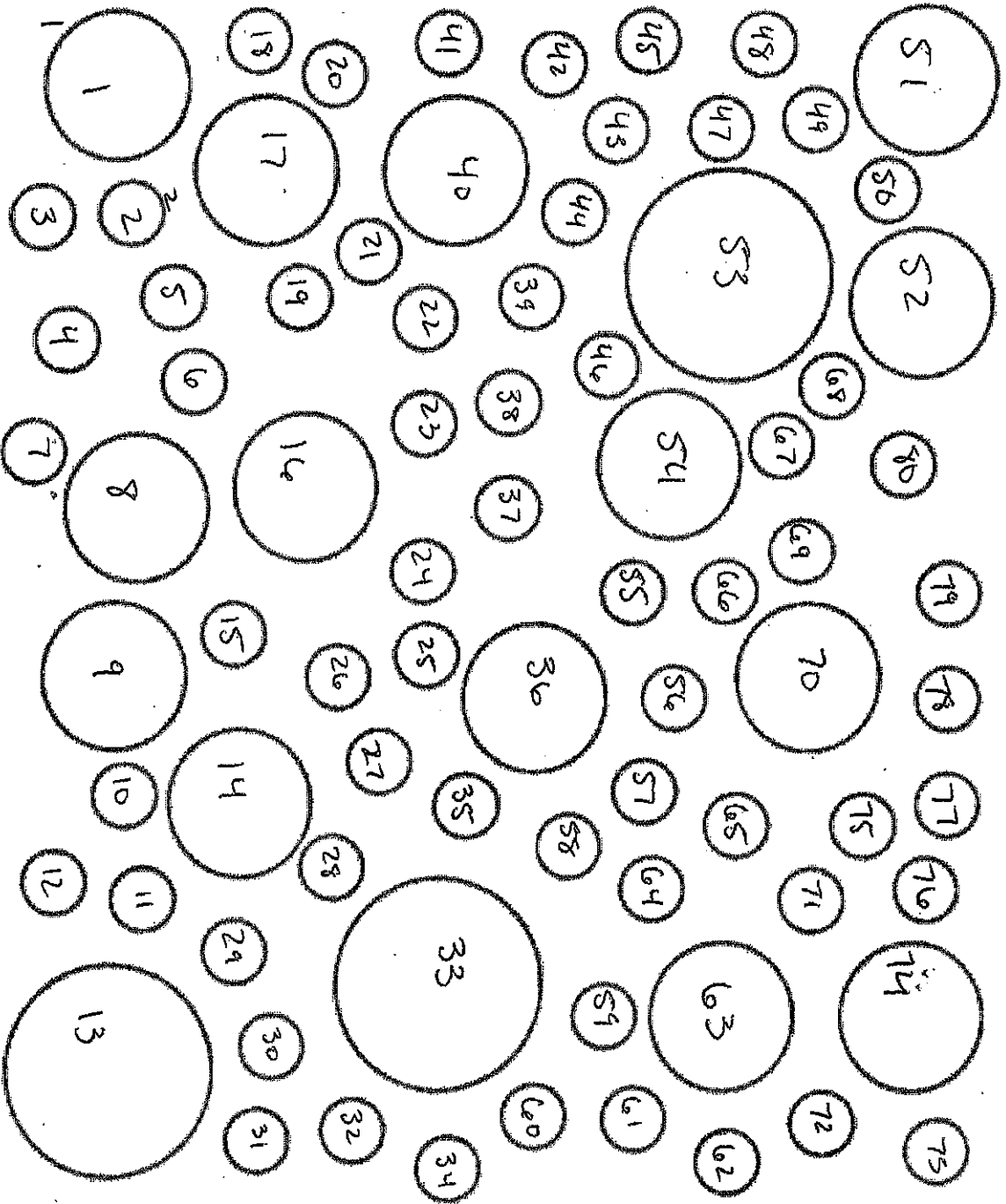


Sample Answer Key



Eighty circles

Circle Activity; Sample Answer Key

Step 1: Number the circles from one to 80.

Step 2: Take 15 seconds and select five circles that best represent the size of the 80 circles.

Step 3: Find the diameter in cm for each circle.

1 st Circle:	Circle #: <u>24</u>	Diameter: <u>1 cm</u>
2 nd Circle:	Circle #: <u>32</u>	Diameter: <u>1 cm</u>
3 rd Circle:	Circle #: <u>33</u>	Diameter: <u>3 cm</u>
4 th Circle:	Circle #: <u>36</u>	Diameter: <u>2 cm</u>
5 th Circle:	Circle #: <u>19</u>	Diameter: <u>1 cm</u>

Step 4: Find the average diameter. Show your work!

Average Diameter: 1.6 cm

Step 5: Find the average diameter for the class. Show your work!

Class Average Diameter: 2.1 cm

Step 6: Use the random digit generator to get five random sample circle numbers and find their diameter.

1 st Circle:	Circle #: <u>25</u>	Diameter: <u>1 cm</u>
2 nd Circle:	Circle #: <u>60</u>	Diameter: <u>1 cm</u>
3 rd Circle:	Circle #: <u>3</u>	Diameter: <u>1 cm</u>
4 th Circle:	Circle #: <u>68</u>	Diameter: <u>1 cm</u>
5 th Circle:	Circle #: <u>23</u>	Diameter: <u>1 cm</u>

Step 7: Find the average diameter of the random sample circles.

Average Diameter: 1 cm

Step 8: Find the average diameter of the random sample of circles for the whole class.

Class Average Diameter: 1.3 cm

Step 9: Find the median, mode, and range comparing the mean diameters of the class' individual choice of circles and the class' random sample of circles.

Answers will vary

Step 10: Compare with words the class's diameter of individual selection circles and random sample circles.

Answers will vary

Step 11: Discuss the questions below with the people seated around you.

Now that you know that the true mean diameter is 1.25 cm, what can you tell about your personal selection and random sample mean diameter compared to the true diameter? Why do you think that the numbers are different?

When we personally selected the circles, we over-estimated how much space the larger circles took up. The random selection did not incorporate anything larger than 1 cm.

However, the random generator was closer to the correct answer.

Step 12: What is bias? How does random selection help eliminate bias?

Bias is when you prefer certain features.

Random sampling gets rid of the chance of you getting to give preference to something

Bias in statistics is inaccurate data, which happens when the data collecting technique isn't done in a balanced way.