

Data Detective Fieldwork

Choose useful data, then collect and record it

GRADE 5 • 5.PS.1.b

5.PS.1.b "Determine the data needed to answer a formulated question and collect or acquire existing data (limited to 30 or fewer data points) using various methods (e.g., polls, observations, measurements, experiments)."

NAME _____

DATE _____

Carry out Tasks 1-3. First state the needed data and method, then record every result. Keep each data set separate. Use the supplied records in Task 4.

Materials and setup

Teacher: form groups with five willing respondents. Provide four pencils, a centimeter ruler and a coin. No names are needed; number people and objects.

For coin trials, use the same coin and a clear tabletop. Flip once per trial; repeat only if the coin falls off the table or lands on its edge.

Build understanding

Define what one data point records before collecting. A poll records a choice; measurement records a quantity with units; an experiment records an outcome under a repeated rule. Keep each investigation at 30 or fewer data points. Record real observations without changing them to fit a prediction.

Try it together

A teacher asks which of three sample cards is chosen most often in a three-person demonstration. What data is needed?

Demonstration records

Record	Value
Person 1	Card B
Person 2	Card A
Person 3	Card B

Record one card choice per person: three data points. Collect choices with a poll; B appears twice. Card B was chosen most often in this demonstration only.

1. Run a five-person poll

Question: Which activity do our five respondents choose: drawing, reading or puzzles? State the needed data and method. Ask each person once; record one choice per numbered person.

One choice each

Record	Value
Person 1	
Person 2	
Person 3	
Person 4	
Person 5	

2. Measure four objects

Question: How long are our four pencils? State the data and method. Measure from one end to the other to the nearest centimeter; record the four labeled values P1-P4 with units.

3. Run six trials

Question: What happens in six flips of our coin? State the data and method. Carry out six valid trials and record the ordered six-letter H/T sequence.

4. Acquire existing data

Question: How many books were borrowed on each listed day? Acquire the needed numbers from this library record. List the five data values with their unit and name the source.

Library record

Record	Value
Monday	12 books
Tuesday	9 books
Wednesday	15 books
Thursday	11 books
Friday	13 books

5. Use the poll evidence

Use your actual poll records. Count each activity, identify any tie for most choices, and answer the original question. Explain why five responses cannot establish the favorite activity of every student in the school.

6. Check the collection

Audit your four investigations. Give the number of data points in each, explain what one point means, and check the 30-point limit. Which data set was acquired from existing records?

7. Repair a bad method

Your group asks which activity is chosen most often, but a recorder writes only the people who chose drawing. Explain why this cannot answer the question fairly. Give a rule for repairing the collection.

Teacher notes

Tasks 1-3 require actual collection and written records, not only proposed methods. If equipment or respondents are unavailable, arrange them before the investigation. Grade variable results against observations, not demonstration values. Task 4 is an explicitly supplied existing record.

Task 1

Answers vary. Needed data: one activity choice from each of five people. Method: poll. Require five actual recorded choices from the allowed options.

Task 2

Answers vary. Needed data: one length in cm per pencil. Method: measurement with a ruler, aligned at zero. Require four actual values rounded to whole centimeters.

Task 3

Answers vary. Needed data: outcome of each flip. Method: repeated coin-flip experiment. Require six actual H/T outcomes. Do not expect exactly three of each.

Task 4

12, 9, 15, 11 and 13 books, in weekday order. Source: the supplied library borrowing record; this acquires existing data. Five daily counts.

Task 5

Answers vary. Counts must sum to 5 and match the five recorded responses. Report all tied leaders. Conclusions apply to the five respondents; they may not represent the whole school. Accept an equivalent justified solution with the required model or recorded evidence.

Task 6

Poll 5 choices; measurement 4 lengths; experiment 6 flip outcomes; acquired records 5 daily counts. Each is at most 30. Task 4 uses existing library records. Accept an equivalent justified solution with the required model or recorded evidence.

Task 7

It omits reading and puzzles choices, so totals and comparisons are incomplete. Collect exactly one allowed choice from each of the same five respondents; retain every response and avoid duplicates.