

Paper Airplane Contest

Teacher Guide · Solutions · Rubric

Grade 2 · All levels

Overview

Students hold a paper airplane contest. They record flight lengths in feet, show them as lengths from 0 on a number line, add and subtract flights with jumps, and solve length word problems.

Time: 2 class periods · **Product:** Flight Record Number Line
Standards: 2.MD.B.5, 2.MD.B.6
Prerequisite skills: Measuring length (Unit 8); Adding and subtracting within 100

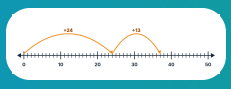
Learning targets

- I can solve length problems by adding and subtracting.
- I can show numbers as lengths from 0 on a number line.
- I can show sums and differences as jumps on a number line.

Timing and materials

- Day 1 (40 min): fly, measure and record (Parts 1–2).
- Day 2 (40 min): jumps and length problems (Parts 3–4).

Materials: Scrap paper for airplanes; Measuring tape or yardstick; Masking tape number line (0 to 50 feet, optional); Number line strips (printable support page). No accounts, paid products or student personal information are needed.



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The three versions

- Remedial: hints for a first step, partly filled tables, sentence frames and fewer open choices; the same learning targets.
- Standard: the full task set at grade level; students choose their strategies and models.
- Advanced: open design constraints, missing information, error analysis and a written justification; no hints.

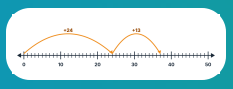
All versions use the same context and learning targets, so groups can share and compare work.

Implementation notes

- If space is short, use the provided flight data instead of flying.
- Ask students to say where they start, which way they jump and how far.
- Advanced students find an unknown flight from a total and a difference.
- Before Part 1, read the challenge aloud and ask students to restate the goal.
- Close with a gallery walk: each group explains one strategy.

Rubric

Learning target	4 Exceeds	3 Meets	2 Approaching	1 Beginning
I can solve length problems by adding and subtracting.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can show numbers as lengths from 0 on a number line.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can show sums and differences as jumps on a number line.	Correct and complete; explains how	Mostly correct	Partly correct	Not yet
I can explain my thinking with pictures, numbers and words.	Clear for every part	Clear for most parts	Some explanation	Little explanation
My flight record number line is complete and matches my math.	Complete, neat, accurate	Complete	Partly complete	Not complete



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Solutions · Remedial KEY

Part 1: Flight Record

Here are three flights (in feet).

Flight	Feet
1	12
2	18
3	9

1. Which flight is longest? How long?
Flight 2, 18 feet

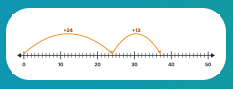
2. Show the longest flight as a length from 0 on the number line. Where does it end?
At 18

Part 2: Jumps

Use a number line.

3. Start at 12. Jump forward 9. Where do you land?
21

4. Start at 18. Jump back 9. Where do you land?
9



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Part 3: Length Problems

Solve. Write the unit.

5. How much farther did flight 2 go than flight 1?

6 feet

6. Flights 1 and 3 together went how far?

21 feet

Part 4: My Flights

Fly your airplane three times. Record the flights and show them on a number line.

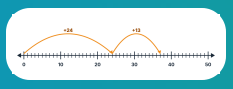
7. What is the difference between your longest and shortest flight?

Answers vary; must be longest − shortest.

Extension

If every flight went 10 feet farther, what would the three flights be?

22, 28, 19 feet



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Solutions · Standard KEY

Part 1: Flight Record

Here are three flights (in feet).

Flight	Feet
1	24
2	37
3	19

1. Which flight is longest? How long?
Flight 2, 37 feet

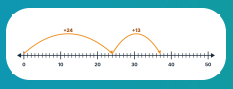
2. Show the longest flight as a length from 0 on the number line. Where does it end?
At 37

Part 2: Jumps

Use a number line.

3. Start at 24. Jump forward 19. Where do you land?
43

4. Start at 37. Jump back 19. Where do you land?
18



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Part 3: Length Problems

Solve. Write the unit.

5. How much farther did flight 2 go than flight 1?

13 feet

6. Flights 1 and 3 together went how far?

43 feet

Part 4: My Flights

Fly your airplane three times. Record the flights and show them on a number line.

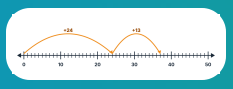
7. What is the difference between your longest and shortest flight?

Answers vary; must be longest − shortest.

Extension

If every flight went 10 feet farther, what would the three flights be?

34, 47, 29 feet



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Solutions · Advanced KEY

Part 1: Flight Record

Here are three flights (in feet).

Flight	Feet
1	38
2	45
3	27

1. Which flight is longest? How long?
Flight 2, 45 feet

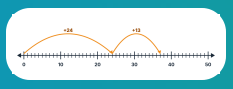
2. Show the longest flight as a length from 0 on the number line. Where does it end?
At 45

Part 2: Jumps

Use a number line.

3. Start at 38. Jump forward 27. Where do you land?
65

4. Start at 45. Jump back 27. Where do you land?
18



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Part 3: Length Problems

Solve. Write the unit.

5. How much farther did flight 2 go than flight 1?

7 feet

6. Flights 1 and 3 together went how far?

65 feet

Part 4: Mystery Flight

Use clues.

7. Flight 4 went 15 feet less than flight 2. Flight 5 went 8 feet more than flight 4. How far did flight 5 go?

38 feet

8. Zoe says a flight from 0 to 12 is 13 feet because she counted 13 tick marks. Explain the mistake.

Count the spaces, not the ticks: from 0 to 12 is 12 feet.

Extension

If every flight went 10 feet farther, what would the three flights be?

48, 55, 37 feet