TEACHER COPY · READ FIRST

Terrain Park Functions on paper · Grade 10

Two printable rides that match the online game: Ride 1 is the course's six stops; Ride 2 is the fresh check with new numbers. No device or account needed.

What is inside

Pages	For	What
This page	Teacher	How to run, score and choose a next step
Rides 1–2 (separate PDF)	Students	Six stops each, with selected graphs and diagrams from the game. Most stops have two or three parts.
Answer key	Teacher	Answer, the game's clue, a worked answer, and what common wrong answers usually mean
Record sheet	Teacher	First answers and fixes, one row per student per ride

Run one ride (30–45 minutes)

1. Copy Ride 1 for each student. A calculator is allowed (degree mode for the trigonometry stops).
2. Check each stop. After a first miss, read the **clue** from the key aloud and let the student try once more. They keep the first answer and write the new one with a star (★), as in the online game.
3. After a second miss, go through the **worked answer** together.
4. Give Ride 2 another day as the fresh check: new numbers, one try, no clue.

Count and choose a next step

Record each part separately. Count **first answers**; fixes with a star are shown but counted apart. Some later parts are scored against the student's own earlier choice (the key says which), as the game does. There is no cut score.

What you see	A next step
Fixed after the clue (★)	Ask what the clue made them notice; check the same stop on Ride 2.
Missed twice	Work the answer together, then give the Ride 2 version of that stop.
The same wrong-answer note keeps repeating	Teach to that error (for example, sine where the run needs tangent, or the full range instead of the IQR).
Part A right, Part B wrong	The setup is solid; talk through how Part B uses it.

Stops and standards · Grade 10

Stop	Standard	Task
1. Chairlift	N.Q.1	Read the lift profile
2. Groomed Run	G.SRT.8	Find the vertical drop
3. Rail	G.GPE.5	Hold a parallel line
4. Big Jump	S.ID.6a	Model the flight
5. Halfpipe	G.SRT.8	Find the practice mark’s height
6. Two-Rider Bonus	S.ID.2	Compare the riders’ consistency

Same questions as the online game. A student who played online may have seen them. Original practice from Pole Mountain Learning, informed by published mathematics expectations. It is not an official Pearson, NAVVY or WY-TOPP assessment and does not use their test questions. Results are practice notes, not grades, and do not predict test scores or establish mastery. Built and reviewed with AI tools; no human classroom trial of this revision yet. Free for classroom use. November 2026 edition.

TEACHER ANSWER KEY · KEEP SEPARATE FROM STUDENT COPIES

Answer key · Grade 10

Ride 1: the six stops

#	Stop · standard	Answer	Clue (after a first miss) and worked answer	Common wrong answers
1A	**Chairlift** N.Q.1	**80 m**	**Clue:** count the squares the lift rises, not the squares it runs. Multiply by the meters per square, then add the base elevation. **Worked:** The summit is 4 squares higher. At 20 m per square, the vertical gain is 80 m.	**4**: squares, not meters. **180**: counted the run, not the rise.
1B		**1,540 m**	**Worked:** Start at 1,460 m and add the 80 m rise. The summit is at 1,540 m.	**80**: the rise, not the elevation. **1,640**: added the run.
2A	**Groomed Run** G.SRT.8	**Glade** (target 38–44 m)	**Clue:** the trail length is the hypotenuse and the vertical drop is opposite the angle, so drop = trail length × sin(angle). Work out both routes and compare with the target. **Worked:** The vertical drop is opposite the angle. Multiply 100 m by sin 25° to get 42.3 m to the nearest tenth.	**Ridge**: drops 55 m, outside the target.
2B		**42.3 m** for Glade Scored against the route the student chose: Ridge = 55 m also counts for Part B.	**Worked:** The vertical drop is opposite the angle. Multiply 100 m by sin 25° to get 42.3 m to the nearest tenth.	**90.6**: cosine (the horizontal side). **46.6**: tangent. **-13.2**: calculator in radians.
3	**Rail** G.GPE.5	**y = −0.5x + 10** any equivalent form, including point-slope	**Clue:** parallel lines have the same slope. Use the rail's slope, then put the start point into y = mx + b to find b. **Worked:** A parallel approach uses the rail's slope of −0.5. Substituting the start (2, 9) gives 9 = −1 + b, so b = 10.	**y = −0.5x + 9**: the rail itself, not through the start. A slope that is the negative reciprocal: perpendicular, not parallel. Right start, different slope: the line drifts.
4A	**Big Jump** S.ID.6a	**C**: y = x(10 − x)/5	**Clue:** Compare your curve with the measured points across the range. Look for the model that stays closest to the measurements. Use that model's positive zero to predict the landing. **Worked:** Model C lands at 10 m, and it stays closest to the measured trials.	**A**: lands at 12 m. **B**: lands at 8 m.
4B		**10 m** for C Scored against the flight the student chose: A = 12, B = 8, C = 10	**Worked:** The landing is the positive zero of y = x(r − x)/d: x = 10.	**5**: where the maximum is, not the landing. **0**: the launch zero.
5	**Halfpipe** G.SRT.8	**5.6 m**	**Clue:** the run is the adjacent leg and the rise is the opposite leg, so rise = run × tan(angle). Round only at the end. **Worked:** The rise is opposite the 35° angle. The 8 m horizontal run is adjacent, so rise = 8 × tan(35°), about 5.6 m.	**4.6**: uses sine with the horizontal leg. **7**: predicts above the mark.

#	Stop · standard	Answer	Clue (after a first miss) and worked answer	Common wrong answers
6A	**Two-Rider Bonus** S.ID.2	**2 s** (Maya: Q1 19, Q3 21)	**Clue:** Q1 is the median of the lower four times and Q3 is the median of the upper four. IQR = Q3 − Q1. The smaller IQR is the more consistent middle half. **Worked:** Both medians are 20 s. Maya's quartiles are 19 and 21 s, so her IQR is 2 s. Eli's are 16.5 and 23.5 s, so his IQR is 7 s. Maya's middle half is less spread out.	**4**: the full range.
6B		**7 s** (Eli: Q1 16.5, Q3 23.5)	**Worked:** Eli: Q3 − Q1 = 23.5 − 16.5 = 7 s.	**10**: the full range. **8**: used the 2nd and 7th times, not the quartiles.
6C		**Maya** (the smaller IQR)	**Worked:** A narrower middle half (smaller IQR) means more consistent times.	Choosing the rider with the larger IQR: that is the less consistent middle half.

Ride 2: fresh check (one try, no clue)

#	Stop · standard	Answer	Worked answer	Common wrong answers
1A	**Chairlift** N.Q.1	**75 m**	**Worked:** The summit is 3 squares higher. At 25 m per square, the vertical gain is 75 m.	**3**: squares, not meters. **200**: counted the run, not the rise.
1B		**1,655 m**	**Worked:** Start at 1,580 m and add the 75 m rise. The summit is at 1,655 m.	**75**: the rise, not the elevation. **1,780**: added the run.
2A	**Groomed Run** G.SRT.8	**Ridge** (target 42–48 m)	**Worked:** The vertical drop is opposite the angle. Multiply 90 m by sin 30° to get 45 m.	**Glade**: drops 57.9 m, outside the target.
2B		**45 m** for Ridge Scored against the route the student chose: Glade = 57.9 m also counts for Part B.	**Worked:** The vertical drop is opposite the angle. Multiply 90 m by sin 30° to get 45 m.	**77.9**: cosine (the horizontal side). **52**: tangent. **-88.9**: calculator in radians.
3	**Rail** G.GPE.5	**y = −0.75x + 8.25** any equivalent form, including point-slope	**Worked:** A parallel approach uses the rail's slope of −0.75. Substituting the start (1, 7.5) gives 7.5 = −0.75 + b, so b = 8.25.	**y = −0.75x + 9.75**: the rail itself, not through the start. A slope that is the negative reciprocal: perpendicular, not parallel. Right start, different slope: the line drifts.
4A	**Big Jump** S.ID.6a	**B**: y = x(11 − x)/5.5	**Worked:** Model B lands at 11 m, and it stays closest to the measured trials.	**A**: lands at 9 m. **C**: lands at 13 m.
4B		**11 m** for B Scored against the flight the student chose: A = 9, B = 11, C = 13	**Worked:** The landing is the positive zero of y = x(r − x)/d: x = 11.	**5.5**: where the maximum is, not the landing. **0**: the launch zero.
5	**Halfpipe** G.SRT.8	**5.9 m**	**Worked:** The 7 m run is adjacent to the 40° angle. Multiply 7 by tan(40°) to get the opposite leg, about 5.9 m.	**4.5**: uses sine with the horizontal leg. **7**: predicts above the mark.
6A	**Two-Rider Bonus** S.ID.2	**8 s** (Maya: Q1 18, Q3 26)	**Worked:** Both medians are 22 s. Maya's quartiles are 18 and 26 s, so her IQR is 8 s. Eli's are 20.5 and 23.5 s, so his IQR is 3 s. Eli's middle half is less spread out.	**12**: the full range. **10**: used the 2nd and 7th times, not the quartiles.

#	Stop · standard	Answer	Worked answer	Common wrong answers
6B		**3 s** (Eli: Q1 20.5, Q3 23.5)	**Worked:** Eli: Q3 − Q1 = 23.5 − 20.5 = 3 s.	**6**: the full range. **4**: used the 2nd and 7th times, not the quartiles.
6C		**Eli** (the smaller IQR)	**Worked:** A narrower middle half (smaller IQR) means more consistent times.	Choosing the rider with the larger IQR: that is the less consistent middle half.

TEACHER COPY · CLASS RECORD SHEET

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Use initials or class codes only. One row per student per ride. Copy this page for more students.

Student (initials or code)	Ride #	1. Chairlift A B	2. Groomed Run A B	3. Rail	4. Big Jump A B	5. Halfpipe	6. Two-Rider Bonus A B C	Next step / notes

For each part write ✓ if the FIRST answer was right, or ★ if the student fixed it after the clue (for example "A✓ B★"). Leave it blank if it was still missed. Count only ✓ as first answers, as the online game does.