BERGVLIET HIGH SCHOOL

Grade 9 Technology Practice Tests Teacher Memoranda

Term 4 November 2026 preparation | Teacher memoranda

Use after learners attempt each test. Each test is informal: use errors to plan short corrections and targeted reteaching. Accept equivalent technically correct wording. Award the listed reasoning marks, not a bare preference. Carry a calculation error forward when later working is correct.

Coverage and Classroom Use

Test	Marks	Focus and November QP coverage
1	30	Electrical MCQ; component matching; resistor code/tolerance; Ohm’s law, LED resistor calculation; light sensor diagnosis and adaptation. Covers electrical Q1 items, Q2, Q3 and Q8.
2	30	Processing MCQ; electroplating; drying, grain storage and pickling; collection and packaging cases. Covers processing Q1 items and Q4–Q7.
3	30	Line conventions, first-angle arrangement and scale; simple two-view task and recessed-block three-view task. Covers Q9–Q10 with added drawing practice.

Plan one lesson per test. Suggested use: Test 1 about 35 minutes plus checking; Test 2 up to 40 minutes; Test 3 a full 40-minute drawing period. If a class needs more drawing time, complete the second drawing next lesson and record accuracy separately from speed. The test totals deliberately differ from the formal paper; this is full-scope preparation, not a replica or a predicted paper.

Tests use changed values and contexts. These marks are not a formal cognitive-weighting claim. Print drawing grids at 100% actual size and check the 50 mm bar. Keep this memo separate from learner copies.

Informal Test 1 Memorandum

Total 30 marks

1.1 A - Current in conducting direction. **[1]**

1.2 B - It can remain lit. **[1]**

1.3 B - Light emitted. **[1]**

1.4 C - SPDT changeover. **[1]**

1.5 C - Switches in series. **[1]**

2 2.1 E; 2.2 A; 2.3 G; 2.4 C; 2.5 B. One mark each. **[5]**

3.1 Brown-red gives 12 (1); red multiplier ×100 (1); 1 200 Ω / 1.2 kΩ (1). **[3]**

3.2 ±5%. **[1]**

3.3 I = V/R (1); 12/600 (1); 0.020 A (1). Accept 20 mA with correct equivalent unit. **[3]**

3.4 9 - 3 = 6 V. **[1]**

3.5 20 mA = 0.020 A and R = 6/0.020 (1); 300 Ω (1). Carry forward 3.4 if consistent. **[2]**

3.6 Current halves (1) because voltage halves at constant resistance / I proportional to V (1). **[2]**

4.1 Manually connects or disconnects the alarm supply. **[1]**

4.2 Electronic control of buzzer current from the sensor/base signal. **[1]**

4.3 Cover prevents room light/change in light reaching the LDR. **[1]**

4.4 A light-admitting opening/window or suitable external LDR position, retaining protection. **[1]**

4.5 Upper 22 kΩ resistor and lower LDR at the divider junction (1); junction through 2.2 kΩ to Q1 base with correct supply connections/no bypass (1). Equivalent layouts accepted. **[2]**

4.6 LDR resistance increases in darkness (1), allowing sufficient base drive to switch Q1 on and pass buzzer current (1). Must refer to adapted lower-LDR circuit. Qualitative reasoning is sufficient. **[2]**

Informal Test 2 Memorandum

Total 30 marks

1.1 B - Zinc. **[1]**

1.2 C - Decomposition rather than remoulding. **[1]**

1.3 C - Other polymers/combinations. **[1]**

1.4 B - Reduces available water. **[1]**

2.1 Mobile ions carry current OR it supplies copper ions for the deposit. Do not credit electrons carrying charge through solution. **[1]**

2.2 Key incorrectly positive (1); connect key to negative and copper strip to positive (1). **[2]**

2.3 It interferes with contact/adhesion and a sound even coating. **[1]**

2.4 Mass gained increases with plating time (1); correct paired values, e.g. 0.03 g at 3 min and 0.09 g at 9 min (1). No unlimited extrapolation. **[2]**

2.5 No, with reason: the table measures deposited mass, not long-term corrosion or coating durability. Bare No is insufficient. **[1]**

3.1 Pickling. **[1]**

3.2 Keep dry / protect from moisture, pests or contamination. One valid condition. **[1]**

3.3 Thin 120 - 54 = 66 g (1); thick 120 - 84 = 36 g (1). **[2]**

3.4 Thin batch with correct data comparison (1); greater exposed surface relative to volume/shorter water escape path (1). **[2]**

3.5 No, with reason: microorganisms/other hazards may remain; a validated process/suitable safety evidence is needed. Bare No insufficient. **[1]**

4.1 25 kg was rejected (1); accepted mass/receipt does not establish completed processing into new products (1). **[2]**

4.2 One accurate environmental comparison linked to choice (1); correct chosen surplus vs R30 maintenance threshold (1). A and B can both be defended. A rejects more but has R30 headroom; B rejects less but has only R5 headroom. **[2]**

4.3 Genuine disadvantage (1), feasible linked management response (1), e.g. B small financial margin: control costs/build a reserve; A more rejection: sorting support and review. **[2]**

5.1 Woven polypropylene (1); held the wet 4 kg load whereas tested paper tore (1). **[2]**

5.2 The same bag replaces bags that would otherwise be issued/discarded on later visits. **[1]**

5.3 Evidence-based limitation: ignores reuse, wet failure/replacements or unmeasured manufacturing/lifecycle impacts. Accept equivalent reasoning. **[1]**

5.4 One mark per distinct feasible action: bring-back reminders, avoid automatic bag issue, deposit/borrow scheme, return/reuse collection. No double credit for restating one action. **[2]**

Informal Test 3 Memorandum

Total 30 marks

1.1 A visible outlines/edges (1); B hidden edges/details (1). **[2]**

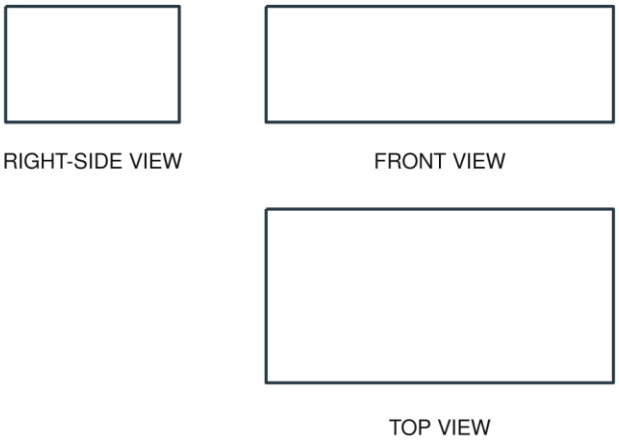
1.2 Centres or axes of symmetry; thin chain line. **[1]**

1.3 Drawn length 50 mm (1); dimension remains actual size 100 mm (1). **[2]**

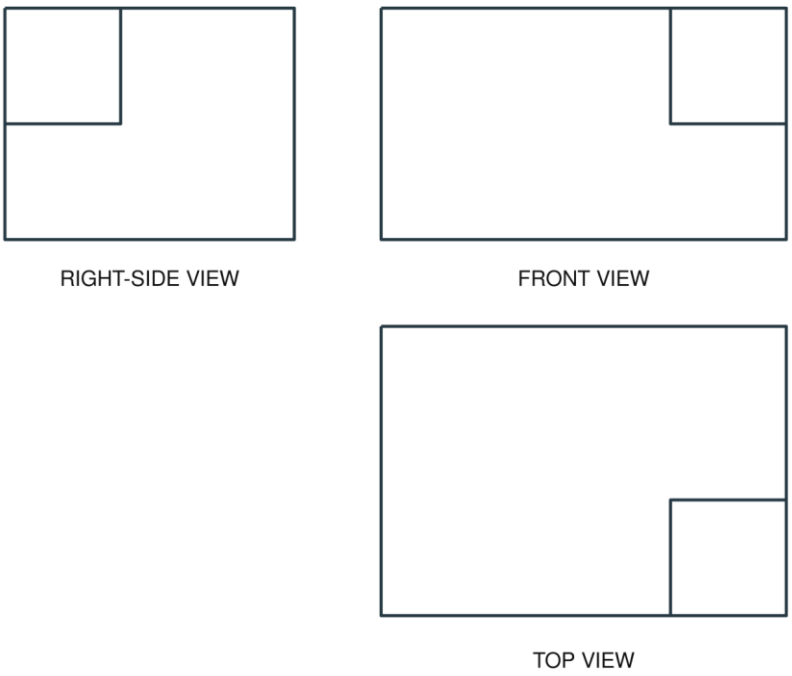
2 Front rectangle 60 × 20 mm (3: shape 1, width 1, height 1); top rectangle 60 × 30 mm (3: shape 1, width 1, depth 1); top below front and aligned (1); three correct actual dimension values placed unambiguously (2: all three 2, two 1, fewer 0); correct line conventions and both labels (1). **[10]**

3 Use the model and analytic rubric in the memo. Front 3, top 3, right-side 3, first-angle arrangement/alignment 2, four dimensions 2, line conventions/labels 2. Credit features independently. **[15]**

Test 3 Model Views



Question 2: only FRONT and TOP views were required. The side view is shown for teacher reference and earns no additional marks.



Question 3: 3 marks per view for correct outer geometry, size/proportion and relevant step/recess edges. Arrangement/alignment: top below front (1), right-side left of front with corresponding edges aligned (1). Dimensions: 0.5 each for four correct actual dimensions with clear feature association (2). Correct line conventions (1), all view labels (1). Allow ±1 mm for ruler work. If scale or placement is wrong, withhold only the relevant criterion; retain credit for correct geometry.

Recessed block: all three outer view boundaries remain rectangles because the rear material remains full height. The front recess edges occupy the upper-right corner; top recess at front-right; right-side recess at upper-front (left in the model side view). Do not score an L-shaped outer silhouette as a complete correct view.