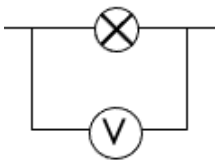
Science Mastery Year 8 Assessment Summer2 2023: Paper 1 MARK SCHEME

1. *We mark for meaning – if students have demonstrated they understand the marking point award the mark. BUT don't make inferences.*
2. *Accept phonetic spellings e.g. fizics*
3. *Apply the list principle e.g. right answer + wrong answer = 0*
4. *To credit a marking point that is not listed in this mark scheme please contact your Head of Department and they will e-mail kathleen.webb@arkcurriculumplus.org.uk*

Question	Answers	*Extra information*	Mark
1a	Any **one** from: • It contains chloroplasts • It contains a vacuole • It contains a cell wall	*Ignore shape* *Allow it is a palisade mesophyll cell*	**1**
1b	Chloroplast		**1**
1c	carbon dioxide oxygen	*Both required for the mark* *Must be correct way round*	**1**
1d	Root cells may not contain chloroplasts They are below ground so would not photosynthesise or Root cells contain a large(r) vacuole They absorb water and nutrients	*Structure (first point) must relate to function (second point)*	**1** **1**
2a	B		**1**
2b	Igneous	*Allow extrusive (igneous)*	**1**
2c	A (Sulfur burns and produces sulfur dioxide)		**1**
2d	Sulfur dioxide (dissolves to) form acid rain or sulfur dioxide is a (respiratory) irritant		**1**
2e	Objective lens		**1**
2f	10 x 10 = (X)100	*Allow correct answer with no working for 2 marks*	**2**
2g	Above the surface of the Earth Because lava/rocks cool quickly/faster	*Allow above ground*	**1** **1**

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3a	Series circuit There is only one path for the current to flow	 *Allow there are no branches* *Allow the components are all connected in one loop*	**1** **1**
3b		*Allow mark for correct symbol that is drawn in the space after question (i.e. not on the diagram)*	**1**
3c	The rate of <u>flow of charge</u>	*Ignore speed*	**1**
3d	Charge = 0.75 x 30 = 22.5 Coulombs/C	*Allow correct answer with units but no working for 3 marks*	**1** **1** **1**
3e		*Symbol and connection are both required for the mark* *Allow voltmeter connected to either bulb, or across both bulbs together.*	**1**
3f	2.5 = 0.75 x resistance Resistance = 3.33 Ω (Ohms)	*First mark for substitution of correct values*	**1** **1** **1**
3gi	Resistance will increase		**1**
3gii	Brightness of the bulbs will decrease		**1**
4a	Stomach		**1**
4b	To break down large molecules into smaller molecules To absorb molecules/nutrients into the bloodstream	*Allow substances for molecules*	**1** **1**

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4c	Enzymes		**1**
4d	Any **one** from: • For growth • For repair		**1**
4e	Any **one** from: • Volume of jelly • Mass of jelly • volume of liquid • Type of protein/jelly		**1**
4f	Any **one** from: • As a control • As a comparison • To show that (the enzyme in) the mango juice is digesting the jelly • To show that water does not digest the jelly		**1**
4g	Any **one** from: • The jelly in small cubes is digested faster • It takes longer for the jelly to be digested as one big cube		**1**
5a	1 carbon atom <u>and</u> 4 hydrogen atoms	*Both elements and numbers required for the mark*	**1**
5b	Combustion	*Allow oxidation* *Ignore burning*	**1**
5c	$CH_4 + \underline{2}\ O_2 \rightarrow \underline{2}\ H_2O + CO_2$	*Both numbers required for the mark*	**1**

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5d	C		**1**
5e	Particles move at <u>random speeds</u> in <u>random directions</u>	*Ignore points on the arrangement of particles (i.e. particles are spread out)* *Allow a range of speeds*	**1**
5f	Burning methane <u>produces carbon dioxide</u> Which contributes to global warming	 *Ignore carbon dioxide is a greenhouse gas* *Allow carbon dioxide is contributing to the enhanced greenhouse effect*	**1** **1**
5g	Burning wood would be more environmentally friendly Trees absorb carbon dioxide Growing trees is renewable or Burning wood may not be more environmentally friendly Process still produces carbon dioxide It requires large numbers of trees to be cut down	*First mark is for a common on environmental friendliness* *Second and third marks are for reason/justification*	**1** **1** **1**