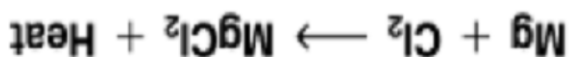


Sample SR Item

Magnesium (Mg) in solid form can chemically react with chlorine (Cl₂) gas to form magnesium chloride (MgCl₂). This reaction is exothermic.



In the reaction between Mg and Cl₂, what determines how quickly the reaction will occur? Explain your answer.

Correct and Complete Response

The rate of a reaction depends on the surface area of the Mg and the concentration of the Cl₂. Also, the pressure and temperature of the reactants will have an effect on the rate of reaction. The number of molecules interacting and the energy in those molecules will determine the rate of reaction.

FCAT SCIENCE

PLANNING CARDS Grade 11

BENCHMARK SC.A.1.4.4.

Item Type(s)	MC, GR, SR
Benchmark Clarification	The student identifies factors (e.g., surface area, pH) that affect the rate of reaction among atoms and molecules.
Content Limits	Items will list both the name and the symbol for chemical elements and compounds. Items will NOT address the reaction orders dependent on concentrations, such as a first-order reaction. Items may address the behavior of gases under changing pressure. Items may describe real-life experiments or scenarios in which a variable is altered to affect the rate of reaction.
Stimulus Attributes	Items may involve the use of reaction rate charts, diagrams, or graphs. Items may provide the student with data in equation form.
Response Attributes	Items will describe units in which the answer is to be given. Items may require responses in the form of equations, graphics, statements, or tables.