

The Museum of Moving Particles

Particle Model of Matter & States of Matter

Name: _____ Date: _____

Circle the best answer for 1 and 2. Answer 3 in complete sentences.

1. Why does food coloring spread faster in hot water than in cold water?

- (A) Hot water particles move faster
- (B) Cold water has no particles
- (C) Hot water is heavier
- (D) Food coloring melts

2. What happens to particles when a metal is heated?

- (A) They get bigger
- (B) They move faster and spread slightly apart
- (C) They stop moving
- (D) They turn into a gas immediately

Read: Two identical cups each held 200 mL of water. Cup A sat in a 35 °C room. Cup B sat in a 15 °C room. After 3 days, Cup A had 120 mL left and Cup B had 180 mL left.

3. Why did Cup A lose more water? Explain using the particle model.

Use Claim-Evidence-Reasoning: Claim, Evidence, Reasoning.

The Museum of Moving Particles: Exit Ticket

Total: 5 points. Mastery: 4 or more.

#	Answer	Points
1	(A) Hot water particles move faster	1 point
2	(B) They move faster and spread slightly apart	1 point
3	Claim: Cup A lost more water because it was warmer, so more water evaporated. Evidence: Cup A lost 80 mL (200 -> 120) while Cup B lost only 20 mL (200 -> 180). Reasoning: At 35 °C the particles had more thermal energy and moved faster, so more of them broke free from the liquid and became gas (evaporation).	3 points: Claim: warmer cup evaporated more; Evidence: 80 mL vs. 20 mL lost; Reasoning: more thermal energy -> faster particles -> evaporation.