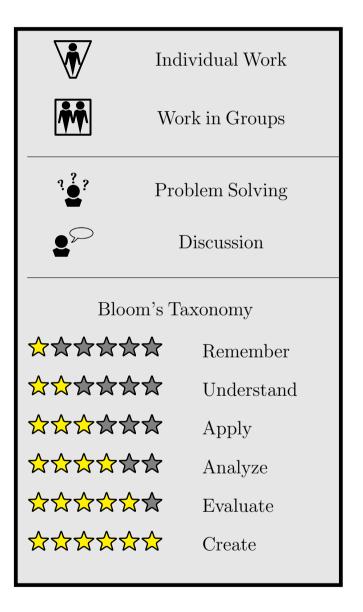## In Class (Instructor)   In Class (Students)

Begin Here.

Instructor hands out an exam with multiple choice questions relating to kinematics, vectors, and coordinate systems. Unlike most exams, the questions are designed to be somewhat ambiguous and promote discussion.

Individually, students solve and answer each question to the best of their abilities. The final question is one in which three solutions are presented to a problem, but each implicitly uses a different coordinate system. Students must determine which solution(s) are correct, and provide their justification.

01

Instructor assigns groups of 3-4. Each group is given a scratch card.

Groups discuss their solutions to each problem, determining which is correct. They then use a coin to scratch off the corresponding entry on the scratch card, which reveals whether or not it was the correct answer.

If the students reveal an incorrect answer, they may attempt the question again until they reveal the correct answer. They are graded in part based on the number of revealed answers on the scratch card (this should, however, be a formative exam with little real impact on their grade).

02

Legend

	Individual Work
	Work in Groups
	Problem Solving
	Discussion

Bloom's Taxonomy

★☆☆☆☆☆	Remember
★★☆☆☆☆	Understand
★★★☆☆☆	Apply
★★★★☆☆	Analyze
★★★★★☆	Evaluate
★★★★★★	Create