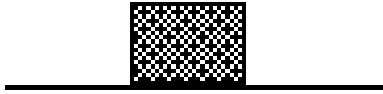


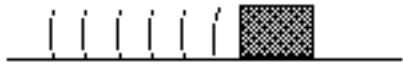



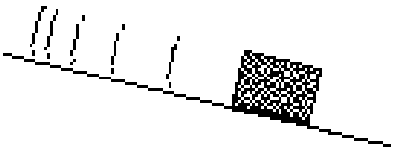

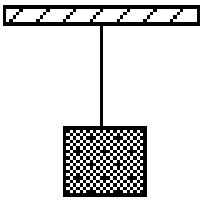
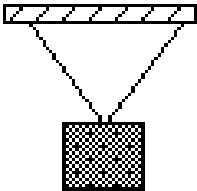
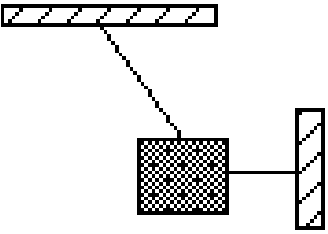
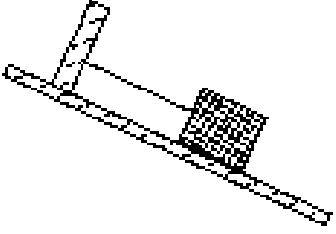
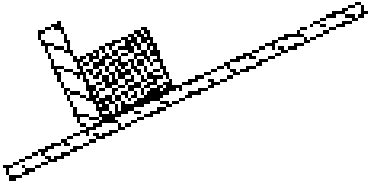
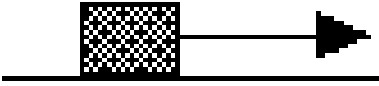
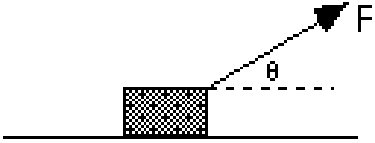
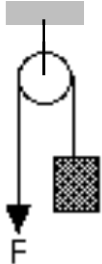
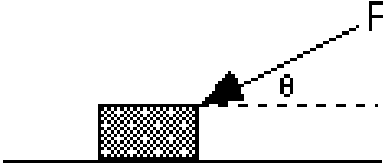



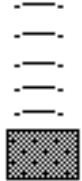

UNIT 3 WORKSHEET 1: Force Diagrams

In each of the following situations, represent the object with a particle. Sketch all the forces acting upon the object, **making the length of each vector represent the magnitude of the force.**

Original Diagram	Useful Free Body Diagram	AP Exam Free Body Diagram
<p>1. Object lies motionless.</p> 		
<p>2. Object slides at constant speed without friction</p> 		
<p>3. Object slows due to kinetic friction.</p> 		
<p>4. Object slides without friction.</p> 		
<p>5. Static friction prevents sliding.</p> 		

Original Diagram	Useful Free Body Diagram	AP Exam Free Body Diagram
<p>6. An object is suspended from the ceiling.</p> 		
<p>7. An object is suspended from the ceiling.</p> 		
<p>8. The object is motionless.</p> 		
<p>9. The object is motionless.</p> 		
<p>10. The object is motionless.</p> 		

Original Diagram	Useful Free Body Diagram	AP Exam Free Body Diagram
<p>11. The object is pulled by a force parallel to the surface and doesn't move.</p> 		
<p>12. The object is pulled by a force at an angle to the surface & moves at a constant velocity.</p> 		
<p>13. The object is pulled upward at constant speed.</p> 		
<p>14. The object is pushed by a force applied downward at an angle and doesn't move.</p> 		
<p>15. The object is falling (no air resistance).</p> 		

Original Diagram	Useful Free Body Diagram	AP Exam Free Body Diagram
<p data-bbox="94 157 470 220">16. The object is falling at constant (terminal) velocity.</p> 		
<p data-bbox="94 483 470 546">17. The ball is rising in a parabolic trajectory.</p> 		
<p data-bbox="94 808 511 871">18. The ball is at the top of a parabolic trajectory.</p> 