**Sun Valley Pacing Plan – Motion, Force, and Models Unit**

Modified by Sun Valley Teachers from the FOSS Science Resources 3rd Edition Unit – Motion, Force, and Models, Harcourt School Publishers California Science for Grade 3, and

iTeams Learning

**NGSS**: Physical Science Standards 3-PS 2-1 & 3-PS 2-2

Engineering Standards 3-5-ETS 1-1, 1-2, & 1-3

**Week 1: Introduction Activities**

1. iTeams “Bird Balance” lesson. Please see iTeams website for detailed lesson.
2. Adapted lesson using Exploritorium gravity and balance lesson, lesson plan to follow.
3. Read pages 5-6 in FOSS Science Recourses *Motion, Force, and Models* (gravity)

**Week 2: Background Information**

1. Read pages 40-43 in HSP *California Science* 3rd Grade (introducing the scientific method). Follow with a class discussion.
2. Read pages 55-68 in FOSS Science Recourses *Motion, Force, and Models* (Engineering design process background information – inventions to solve problems)
3. Mini lesson on the difference between the scientific method process and engineering design process and their applications). Please refer to iTeams handouts for reference.

**Week 3: Stored and Moving Energy**

1. Ball Bouncing experiment found on pages 66-67 of in HSP *California Science* 3rd Grade
2. Discuss investigation skill - drawing a conclusion from data based evidence.

**Week 4: Levers**

1. Read pages 3-4 in FOSS Science Recourses *Motion, Force, and Models*
2. Lever Logic Experiment – *Science Buddies: Cooperative Science Activities Grades 3-8* (attached)

**Week 5: Pendulums and Controlled Experiments**

1. Read page 11 in FOSS Science Recourses *Motion, Force, and Models* and facilitate a discussion of controlled experiments.
2. Pendulum experiment (will be included later)
3. Reading on pendulums fro FOSS Science Recourses *Motion, Force, and Models pages 7-13*

**Week 6: Balls and Ramps**

1. Read pages 15-26 in in FOSS Science Recourses *Motion, Force, and Models*
2. Complete 4 balls and ramps experiments included in the FOSS kit (coordinating information attached, FOSS directions to be added later)

**Week 7: Culminating Design Challenge – Roller Coaster Challenge**

1. Challenge students to create a marble roller coaster that is both safe and fun. (lesson attached)