Objective

By the end of this lesson, you will understand the basic principles of physics as they apply to skateboarding.

Materials and Prep

- Skateboard
- Flat and smooth surface for skateboarding
- Helmet and protective gear
- Notebook and pen/pencil

No prior knowledge is required for this lesson.

Activities

1. Activity 1: Introduction to Skateboarding Physics

   Start by discussing the basic physics concepts that apply to skateboarding, such as gravity, friction, and motion. Explain how these concepts influence a skateboarder's movements and tricks.

2. Activity 2: Experimenting with Friction

   Set up a small ramp or incline and ask the student to skateboard down it. Have them observe and describe how friction affects their speed and control. Discuss the factors that can increase or decrease friction, such as surface texture and the condition of the skateboard wheels.

3. Activity 3: Exploring Momentum

   Ask the student to perform a trick, such as an ollie or a kickflip. Discuss how momentum plays a role in executing the trick successfully. Explain the concept of conservation of momentum and how it applies to skateboarding.

4. Activity 4: Investigating Balance and Center of Mass

   Have the student practice balancing on the skateboard while stationary and in motion. Discuss the importance of maintaining a low center of mass for stability. Encourage the student to experiment with different body positions to understand how they affect balance.

United Kingdom: Year 7 Talking Points

- "In the United Kingdom, skateboarding is a popular recreational activity and a recognized sport."
- "Skateboarding requires an understanding of physics principles to perform tricks and maneuvers effectively."
- "Gravity is the force that pulls objects towards the Earth. It affects how a skateboarder moves and stays balanced."
- "Friction is the force that opposes motion. Different surfaces and conditions can affect how much friction is present."
- "Momentum is the product of an object's mass and its velocity. It determines how difficult or

easy it is to change the skateboarder's speed or direction."
- "Balance is crucial in skateboarding. The skateboarder's center of mass should be low and controlled to maintain stability."