

4. Basketball version 2

Student learning outcomes

- Students will make the basketball from the previous lesson move in both X and Y directions.

Real world applications:

- Students will learn about the math required to move an object in two dimensions, as used in animation, film, and scientific applications.

Assignment requirements:

- This page displays a larger drawing canvas than the previous lesson, and no floor.
- The basketball will move up and down in addition to left and right. The basketball will usually be moving on a diagonal.
- The page will have buttons where the user can change the color and speed of the basketball.
- New JavaScript concepts:
 - getElementById
 - onclick
 - setTimeout
- New math concepts:
 - Using two-dimensional vectors to store the location and trajectory of a moving object.
 - Determining the new trajectory of a basketball that bounces off a wall or the floor.
 - Changing the speed of an object by changing both its X and Y components.

