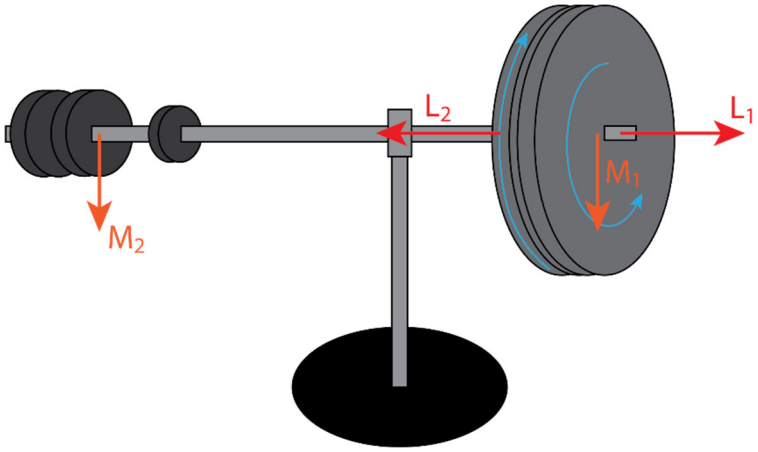
The scenario

Subject (field/title)	**Mechanics / Gyroscope: two disks**
Length of movie	3:33
Main Goals	Rigid body dynamics
Detailed Goals	Explanation of the principle of vector addition of angular momentum.
Structure and description of the experiments	
1. Introduction	Observation of the behavior of the gyro balance when the weight distribution on its arms changes.
2. Main topic	The purpose of the experiment is to introduce students to the subject of angular momentum. Discussion of the phenomenon of angular momentum, discussion of the issue of momentum of force. Adding vector quantities.
Part 1	
Experiment 1: 1:20	***Materials*** *:* • *gyro scale,* • *weights,* • *string.* **Description** : The discs of the gyro balance spin as shown in Fig. 1.  Fig. 1. Initial position of the gyro scale. We set the discs in motion so that they spin in opposite directions. We observe what happens after moving the weight to the left and right. **Questions** : Why doesn't the balance rotate around the vertical axis of rotation as in the case of the experiment: Gyroscope? What can we say about momentum of forces? What can we say about angular momentum?

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	Conclusions: The angular momentum from rotating disks is added vectorally. The magnitudes of these vectors are the same but opposite in direction. The result of adding of angular momentum is equal to 0. Therefore, the system can be treated as an balanced scale (lever). Moving the weight on the left side causes the entire system to tilt from one side to the other. This move is depending of relation between the momentum of force on the right and left side.
Summary, evaluation and comments	**Application:** The film can be used at the beginning of the lesson as an introduction to issues related to mechanics and astronomy, and as a summary to test students' knowledge. It deals with the subject of angular momentum, torque, unbalanced forces in the system. **Level:** secondary school

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