

12.5: Thinking about the material

12.5.1: Reflect and research

1. How can a bicycle move forward? Draw the external forces on the bicycle that are required for the wheels to turn.
2. Does conservation of angular momentum play a role in being able to remain upright on a bicycle? If yes, how?
3. How does an anti-lock braking system (ABS) provide better breaking for your car? What is the physics behind this?

12.5.2: To try at home

1. Describe how you can qualitatively confirm conservation of angular momentum.

12.5.3: Reflect and research

1. Propose an experiment to measure the critical angle of an incline, above which a given object cannot roll without slipping, and compare this to a model prediction.
2. Propose an experiment to test the conservation of angular momentum of a rotating object.
3. Propose an experiment to test whether an object with constant velocity can impart angular momentum to another object.

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