

1 Intuitive Physics

List of questions and answers for intuitive physics.

1.1 Intuitive Physics - Rolling

“There is a tilted board above a bucket. Where does a ball end up if it is placed on the board?”	
GPT-4	The ball will end up in the bucket.
GPT-3	The ball will end up in the bucket.
Luminous A:	The ball will roll down the board. <i>[continued]</i>
OPT	A. It will fall into the bucket. B. It will fall into the bucket. <i>[continued]</i>

“There is a tilted board above a bucket. Where does a ball end up if it is placed on the board, if it does not end up in the bucket?”	
GPT-4	If the ball does not end up in the bucket, it would likely end up on the ground or floor, depending on the tilt of the board and any obstacles in its path.
GPT-3	The ball will end up on the ground.
Luminous	A ball is placed on a tilted board. Where does it end up if it is placed on the board, if it does not end up in the bucket? A ball is placed on a tilted board. Where does it <i>[repeating]</i>
OPT	A. It will fall into the bucket. B. It will fall into the bucket. <i>[continued]</i>

“There is a board above a bucket. Where does a ball end up if it is placed on the board?”	
GPT-4	The ball will end up in the bucket if the board is tilted or moved, causing the ball to roll off. If the board is not moved, the ball will stay on the board.
GPT-3	The ball will end up in the bucket.
Luminous	A ball is placed on a table. Where does it end up if it is rolled under a table? A ball is placed on a table. Where does it end up if it is rolled under a table? <i>[repeating]</i>
OPT	A. It falls into the bucket. B. It falls into the bucket and bounces off the board. <i>[continued]</i>
“There is a leveled board above a bucket. Where does a ball end up if it is placed on the board?”	
GPT-4	The ball will end up in the bucket.
GPT-3	The ball will end up in the bucket.
Luminous	A: The ball will roll down the board and into the bucket. A: The ball will roll down the board and into the bucket. <i>[repeating]</i>
OPT	A. It falls into the bucket. B. It falls into the bucket and bounces off the board. <i>[continued]</i>
“A ball is placed on a table and rolls off. What does this tell us about the table?”	
GPT-4	The table is not level or flat.
GPT-3	The table is not level.
Luminous	A. The table is flat. B. The table is round. <i>[continued]</i>
OPT	A ball is placed on a table and rolls off. What does this tell us about the table? A ball is placed on a table and rolls off. What does this tell us about the table? <i>[repeating]</i>

“A ball is placed on a surface and rolls off. What does this tell us about the surface?”	
GPT-4	The surface is not flat or level. It is inclined or sloped.
GPT-3	The surface is not level.
Luminous	A ball is placed on a surface and rolls off. What does this tell us about the surface? A ball is placed on a surface and rolls off. What does this tell us about the surface? <i>[repeating]</i>
OPT	A ball is placed on a surface and rolls off. What does this tell us about the surface? A ball is placed on a surface and rolls off. What does this tell us about the surface? <i>[repeating]</i>
“A ball is placed on a table and rolls to the center. What does this tell us about the table?”	
GPT-4	The table is not level; it is slightly inclined or sloped towards the center.
GPT-3	The table is level.
Luminous	A ball is placed on a table and rolls to the center. What does this tell us about the table? A ball is placed on a table and rolls to the center. What does this tell us about the table? <i>[repeating]</i>
OPT	A ball is placed on a table and rolls to the center. What does this tell us about the table? A ball is placed on a table and rolls to the center. What does this tell us about the table? <i>[repeating]</i>

“A ball is placed on a surface and rolls to the center. What does this tell us about the surface?”	
GPT-4	This tells us that the surface is likely concave or sloped inward towards the center.
GPT-3	The surface is curved.
Luminous	A ball is placed on a surface and rolls to the center. What does this tell us about the surface? A ball is placed on a surface and rolls to the center. What does this tell us about the surface? <i>[repeating]</i>
OPT	A ball is placed on a surface and rolls to the center. What does this tell us about the surface? A ball is placed on a surface and rolls to the center. What does this tell us about the surface? <i>[repeating]</i>

1.2 Intuitive Physics - Support

“A block is placed on one support. What happens if the support is removed?”	
GPT-4	The block will fall due to gravity.
GPT-3	If the support is removed, the block will fall.
Luminous	A block is placed on one support. What happens if the support is removed? A block is placed on one support. What happens if the support is removed? <i>[repeating]</i>
OPT	A block is placed on one support. What happens if the support is removed? A block is placed on one support. What happens if the support is removed? <i>[repeating]</i>

“A block is placed on two supports. What happens if one of the supports is removed?”	
GPT-4	If one of the supports is removed, the block will likely fall or tilt to the side where the support was removed, depending on the balance and weight distribution of the block.
GPT-3	If one of the supports is removed, the block will fall.
Luminous	A block is placed on two supports. What happens if one of the supports is removed? A block is placed on two supports. What happens if one of the supports is removed? <i>[repeating]</i>
OPT	A block is placed on two supports. What happens if one of the supports is removed? A block is placed on two supports. What happens if one of the supports is removed? <i>[repeating]</i>
“A block is placed on three supports. What happens if one of the supports is removed?”	
GPT-4	The stability of the block may be compromised. Depending on the weight distribution and the position of the remaining supports, the block may tilt, wobble, or even fall.
GPT-3	If one of the supports is removed, the block will fall.
Luminous	A block is placed on three supports. What happens if one of the supports is removed? A block is placed on three supports. What happens if one of the supports is removed? <i>[repeating]</i>
OPT	A block is placed on three supports. What happens if one of the supports is removed? A block is placed on three supports. What happens if one of the supports is removed? <i>[repeating]</i>

“A block is placed on three supports. What happens if the left support is removed?”	
GPT-4	The stability of the block would depend on the position of the remaining supports and the weight distribution of the block. If the remaining supports are positioned towards the center and right of the block and can bear the weight, the block may tilt or lean towards the
GPT-3	If the left support is removed, the block will fall to the left.
Luminous	A block is placed on three supports. What happens if the right support is removed? A block is placed on three supports. What happens if the top support is removed? <i>[repeating]</i>
OPT	A block is placed on three supports. What happens if the left support is removed? A block is placed on three supports. What happens if the left support is removed? <i>[repeating]</i>
“A block is placed on three supports. What happens if the right support is removed?”	
GPT-4	The outcome would depend on the distribution of weight and the position of the remaining supports. If the weight of the block is evenly distributed and the remaining supports are positioned to maintain balance, the block may remain in place. However, if the weight distribution or
GPT-3	If the right support is removed, the block will fall to the left.
Luminous	A block is placed on three supports. What happens if the left support is removed? A block is placed on three supports. What happens if the middle support is removed? <i>[repeating]</i>
OPT	A block is placed on three supports. What happens if the right support is removed? A block is placed on three supports. What happens if the right support is removed? <i>[repeating]</i>

“A block is placed on three supports. What happens if the middle support is removed?”	
GPT-4	The block may sag or collapse in the middle depending on the weight of the block and the strength of the remaining supports. If the remaining supports are strong enough and properly positioned, they may still be able to hold the block up, but it will likely
GPT-3	If the middle support is removed, the block will fall.
Luminous	A block is placed on three supports. What happens if the middle support is removed? A block is placed on three supports. What happens if the middle support is removed? <i>[repeating]</i>
OPT	A block is placed on three supports. What happens if the middle support is removed? A block is placed on three supports. What happens if the middle support is removed? <i>[repeating]</i>
“A vase is supported by a table. What happens if the table is removed?”	
GPT-4	The vase will fall to the ground due to gravity.
GPT-3	If the table is removed, the vase will fall to the ground.
Luminous	A vase is supported by a table. What happens if the table is removed? A vase is supported by a table. What happens if the table is removed? <i>[repeating]</i>
OPT	A. The vase falls over. B. The vase falls over. <i>[continued]</i>
“An vase is supported by a table. What happens if the table disappears?”	
GPT-4	The vase would fall due to gravity and likely shatter upon hitting the ground.
GPT-3	If the table disappears, the vase will fall to the ground.
Luminous	A vase is supported by a table. What happens if the table disappears? A vase is supported by a table. What happens if the table disappears? <i>[repeating]</i>
OPT	A. The vase falls over. B. The vase falls over. <i>[continued]</i>

1.3 Intuitive Physics - Collisions

“A heavy and a light ball are heading towards each other. Which ball will bounce away?”	
GPT-4	Both balls will bounce away after the collision due to the law of conservation of momentum. However, the lighter ball will likely bounce away with a higher speed than the heavier ball.
GPT-3	The light ball will bounce away.
Luminous A:	The heavy ball will bounce away. <i>[continued]</i>
OPT	A heavy and a light ball are heading towards each other. Which ball will bounce away? A heavy and a light ball are heading towards each other. Which ball will bounce away? <i>[repeating]</i>
“Two equal weight balls are heading towards each other. Which ball will bounce away?”	
GPT-4	Both balls will bounce away from each other upon impact due to the conservation of momentum.
GPT-3	The ball with more momentum will bounce away.
Luminous A:	The answer is: <i>[continued]</i>
OPT	A. The heavier ball B. The lighter ball <i>[continued]</i>

“Two balls are heading towards each other with the same speed. Which ball will bounce away?”	
GPT-4	Both balls will bounce away if they collide, assuming they are of the same mass and there is no other external force acting on them. This is due to the law of conservation of momentum.
GPT-3	The ball with more mass will bounce away.
Luminous A:	The ball with the higher mass will bounce away. <i>[continued]</i>
OPT	Answer: The ball with lesser mass will bounce away. Question: A ball is thrown upwards with a speed of 20 m/s. The ball is thrown upwards with a speed of 20 m/s. The ball is thrown upwards with a <i>[repeating]</i>
“Two equal weight balls are heading towards each other with the same speed. Which ball will bounce away?”	
GPT-4	Both balls will bounce away from each other. This is due to the law of conservation of momentum. Since they have equal weight and speed, their momenta are equal and opposite. When they collide, they will bounce away with the same speed they had
GPT-3	Both balls will bounce away.
Luminous A:	The answer is the one that is closer to the center of the circle. <i>[continued]</i>
OPT	A. The heavier ball B. The lighter ball <i>[continued]</i>

1.4 Intuitive Physics - Seesaw

“A heavy and a light object are placed on a seesaw. Which object will move up?”	
GPT-4	The light object will move up.
GPT-3	The light object will move up.
Luminous	A. The heavy object B. The light object <i>[continued]</i>
OPT	A heavy and a light object are placed on a seesaw. Which object will move up? A heavy and a light object are placed on a seesaw. Which object will move up? <i>[repeating]</i>
“A heavy and a light object are placed on a seesaw. Which object will move down?”	
GPT-4	The heavy object will move down.
GPT-3	The heavy object will move down.
Luminous	A. The heavy object B. The light object <i>[continued]</i>
OPT	A heavy and a light object are placed on a seesaw. Which object will move down? A heavy and a light object are placed on a seesaw. Which object will move down? <i>[repeating]</i>
“Two equal weight object are placed on a seesaw. Which object will move up?”	
GPT-4	Neither. If the objects are of equal weight and properly balanced on the seesaw, they should remain level and not move up or down.
GPT-3	The object on the left will move up.
Luminous	A. The heavier object B. The lighter object <i>[continued]</i>
OPT	A. The heavier object B. The lighter object <i>[continued]</i>

“A heavy and a light object are placed on the same side of a seesaw. Which object will move down?”	
GPT-4	The heavy object will move down.
GPT-3	The heavy object will move down.
Luminous	A. The heavy object B. The light object <i>[continued]</i>
OPT	A heavy and a light object are placed on the same side of a seesaw. Which object will move down? A heavy and a light object are placed on the same side of a seesaw. Which object will <i>[repeating]</i>

1.5 Intuitive Physics - Weights

“What is heavier: A hand full of metal or a hand full of feathers?”	
GPT-4	A hand full of metal is heavier than a hand full of feathers.
GPT-3	A hand full of metal is heavier than a hand full of feathers.
Luminous	A: The answer is that the metal is heavier. A: The answer is that the metal is heavier. <i>[repeating]</i>
OPT	A hand full of feathers. Why? <i>[continued]</i>

“What is heavier: A kilogram of metal or a kilogram of feathers?”	
GPT-4	Neither is heavier. They both weigh the same - one kilogram.
GPT-3	A kilogram of metal is heavier than a kilogram of feathers.
Luminous	A: The answer is that the kilogram of feathers is heavier. A: The answer is that the kilogram of feathers is heavier. <i>[repeating]</i>
OPT	A kilogram of feathers is heavier than a kilogram of metal. Why? <i>[continued]</i>

“What is heavier: A kilogram of metal or a kilogram of rock?”	
GPT-4	Neither is heavier. They both weigh the same - one kilogram.
GPT-3	A kilogram of metal is heavier than a kilogram of rock.
Luminous	A: The kilogram is a unit of mass, not weight. A: The kilogram is a unit of mass, not weight. <i>[repeating]</i>
OPT	A kilogram of metal is heavier than a kilogram of rock. Why? <i>[continued]</i>
“What is heavier: A kilogram of metal or a kilogram of lead?”	
GPT-4	Neither is heavier. They both weigh the same - one kilogram.
GPT-3	A kilogram of lead is heavier than a kilogram of metal.
Luminous	A: The kilogram is a unit of mass. It is defined such that 1 kg is the mass of the International Prototype Kilogram (IPK), which is a platinum-iridium international standard stored in France. If the IP
OPT	A kilogram of metal. Why? <i>[continued]</i>
“A kilogram of metal is heavier than a kilogram of feathers” is what most people say, but in reality”	
GPT-4	a kilogram of metal weighs the same as a kilogram of feathers. The weight is the same because a kilogram is a kilogram regardless of the material being weighed. The difference lies in the volume or space that each material occupies. Metal is
GPT-3	they weigh the same.
Luminous	, the weight of a kilogram of feathers is more than a kilogram of metal. The reason is that the density of a substance is the mass of a substance divided by its volume. <i>[continued]</i>
OPT	, a kilogram of feathers is heavier than a kilogram of metal. The reason is that a kilogram of metal is made up of atoms, and atoms are made up of protons, neutrons and electrons. <i>[repeating]</i>

1.6 Intuitive Physics - Tools

“A wooden beam is placed over a stone. A small plastic bottle is placed on one side. What will happen if a person jumps onto the other side of the beam?”	
GPT-4	The force from the person jumping onto the other side of the beam will cause the beam to act like a lever, and the plastic bottle on the other side will be launched into the air.
GPT-3	The beam will rotate and the person will jump into the air.
Luminous	A. The bottle will break. B. The bottle will not break. <i>[continued]</i>
OPT	A wooden beam is placed over a stone. A small plastic bottle is placed on one side. What will happen if a person jumps onto the other side of the beam?
“Mary can not move a heavy stone by herself. However, she brought a small object and a metal rod with her. Is Mary able to move the stone?”	
GPT-4	The text doesn’t provide enough information to determine if Mary can move the stone with the small object and metal rod.
GPT-3	No, Mary is not able to move the stone.
Luminous	A: The answer is no. <i>[continued]</i>
OPT	A. Yes B. No <i>[continued]</i>
“Mary can not move a heavy stone by herself. However, she brought a small object and a metal rod with her. How can Mary move the stone?”	
GPT-4	Mary can use the small object as a fulcrum and the metal rod as a lever to move the stone. By placing the rod under the stone and the small object under the rod, she can apply force to one end of the rod to lift
GPT-3	Mary can use the metal rod as a lever to move the stone.
Luminous	A: The answer is that Mary can move the stone by herself. <i>[continued]</i>
OPT	A. Mary can move the stone by using the rod. B. Mary can move the stone by using the object. <i>[continued]</i>

“Mary can not lift a heavy stone by herself. However, she brought a small object and a metal rod with her. Is Mary able to lift the stone?”	
GPT-4	The text does not provide enough information to determine if Mary can lift the stone with the small object and the metal rod.
GPT-3	No, Mary is not able to lift the stone.
Luminous A:	The answer is no. <i>[continued]</i>
OPT	A. Yes B. No <i>[continued]</i>
“Mary can not lift a heavy stone by herself. However, she brought a small object and metal rod with her. How can Mary lift the stone?”	
GPT-4	Mary can use the small object and metal rod to create a simple lever. She can place the small object (fulcrum) under the metal rod (lever) and then push down on one end of the rod to lift the stone on the other
GPT-3	Mary can use the metal rod as a lever to lift the stone.
Luminous A:	The answer is that Mary can lift the stone if she can lift the rod. <i>[continued]</i>
OPT	Answer: Mary can lift the stone by using the rod. <i>[continued]</i>
“Mary can not lift a heavy stone by herself. However, she brought a calculator with her. Is Mary able to lift the stone?”	
GPT-4	No, a calculator does not help in lifting heavy objects.
GPT-3	No, the calculator is not able to lift the stone.
Luminous A:	The answer is no. <i>[continued]</i>
OPT	Mary can lift the stone. Mary can lift the stone. <i>[repeating]</i>

“Mary can not lift a heavy stone by herself. However, she brought a calculator with her. How can Mary lift the stone?”	
GPT-4	The calculator itself won’t help Mary lift the stone. She would need additional physical help or a tool such as a lever to lift the stone. The calculator could potentially be used to calculate the force needed or the best leverage point, but it won’t
GPT-3	Mary can’t lift the stone by herself, but she can use the calculator to help her.
Luminous A:	Mary can lift the stone by herself if she can calculate the force she needs to apply to the stone. <i>[continued]</i>
OPT	Answer: Mary can lift the stone by using the calculator. <i>[continued]</i>