



A ball is placed on the ground

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That's a **blue ball** resting on a **wooden floor**.

Since the ball is placed on the ground and is not moving, it is in a state of **equilibrium** where the net force acting on it is zero.

Two main forces are acting on the ball:

1. **Gravitational Force (F_g)**: This is the force of the Earth pulling the ball downwards. Its magnitude is given by $F_g = mg$, where m is the mass of the ball and g is the acceleration due to gravity.
2. **Normal Force (F_N)**: This is the **support force** exerted by the floor, pushing the ball upwards, perpendicular (normal) to the surface.

In this static situation:

$$\sum \mathbf{F} = \mathbf{F}_N + \mathbf{F}_g = 0$$

Therefore, the magnitude of the normal force is equal to the magnitude of the gravitational force:

$$F_N = F_g$$

Would you like to know the forces if the ball were **rolling**, or perhaps the materials the ball might be made of?

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That is an interesting setup! The object resting on the wooden floor appears to be a **small, dark blue, solid rubber or silicone ball** (like the one in the previous image), and it is positioned directly beneath a **black plastic container or cup** that is being held by a hand.

While the combination could be for a few purposes, the size, material, and setup suggest a few possibilities, including:

- **Myofascial Release/Massage Tool:** The small, firm, dense rubber balls (often called lacrosse balls or massage balls) are commonly used to apply pressure to trigger points to release tight muscles. In this case, the **black plastic cup/container** might be part of a **cupping set**, which uses suction to lift the skin and underlying tissue. It is also possible the cup is simply being used as a **weight or pressing tool** to apply controlled downward pressure onto the ball for a more intense spot massage on a muscle.
- **Dog Toy/Treat Dispenser:** Small, solid rubber balls, especially in dark colors, are often sold as durable dog toys, sometimes with holes to dispense treats. The plastic container could simply be a part of the dog's other play items or an unrelated object placed nearby.
- **A Game or Magic Trick:** Simple games often use small bouncy balls and cups, such as a "ball in cup" game, or the classic "**Cups and Balls**" **magic trick**, where a magician makes balls appear, vanish, and pass through solid cups.
- **Shaker Ball:** Some small, solid balls are used inside **protein/shake tumblers** (the cup) to help break up powder clumps when shaking.

Given the ball's appearance and the common uses for such equipment, the most likely practical application for both items together is related to **physical therapy or self-massage**, potentially as a form of **myofascial release**.

You might be interested in learning [how to perform the classic "Cups and Balls" magic trick](#).

[Cups and Balls - Easy Magic Trick](#) This video is relevant as it shows a common use for cups and balls: performing an easy magic trick.

 Cups and Balls - Easy Magic Trick #cupsandballs #easymagictrick
#cupsandballstutorial - YouTube 
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Where is the ball?

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The ball is **on the floor, hidden underneath the black cup.**

The sequence of images strongly suggests a magic trick called the **Cups and Balls** or a variation like the **Chop Cup**, where a ball is made to appear or vanish under a cup.

Here is what the images show:

1. **Image 1:** The **blue ball** is resting on the wooden floor.
2. **Image 2:** A hand is lowering a **black cup/container** directly over the ball.
3. **Image 3:** The **black cup** is resting on the floor, and the ball is no longer visible, meaning it is currently **under the cup**.

In the context of the magic trick:

- The goal is to make the audience believe the ball has **vanished, passed through the cup, or moved** to another location.
- The first step of many routines is to simply cover the ball with the cup.

Would you like to know how the trick is often continued to make the ball appear to vanish?