

Group Discussion

How does the process of science work?

What is the methodology of science?

In science, what is a **theory**?

- A. A general notion about a natural event or phenomenon explained by relationships to other natural phenomena
- B. An idea that is suggested or presented as possibly true but that is not known or proven to be true
- C. An idea or explanation of natural phenomena awaiting physical measurements before it can be proven scientifically true
- D. An explanation of natural phenomena that has been well substantiated through repeated observation and experiment

In science, what is a **theory**?

- A. A general notion about a natural event or phenomenon explained by relationships to other natural phenomena
- B. An idea that is suggested or presented as possibly true but that is not known or proven to be true
- C. An idea or explanation of natural phenomena awaiting physical measurements before it can be proven scientifically true
- D. An explanation of natural phenomena that has been well substantiated through repeated observation and experiment

In science, what is a **hypothesis**?

- A. An idea about a natural phenomenon that is usually a pure guess about something people have not thought much about.
- B. An idea proposed to explain a natural phenomenon that has a basis in previous experience, observations or scientific background knowledge.
- C. An idea or explanation of natural phenomena that has yet to be proven with rigorous mathematical proof.
- D. A guess about how a natural phenomenon works that requires further experimental testing in an accredited laboratory.

In science, what is a **hypothesis**?

- A. An idea about a natural phenomenon that is usually a pure guess about something people have not thought much about.
- B. An idea proposed to explain a natural phenomenon that has a basis in previous experience, observations or scientific background knowledge.
- C. An idea or explanation of natural phenomena that has yet to be proven with rigorous mathematical proof.
- D. An guess about how a natural phenomenon works that requires further experimental testing in an accredited laboratory.

What does it mean to **rationalize**?

- A. Establish something as being true through careful consideration of facts and calculations
- B. Deduce that something must be true after other considerations are proven wrong
- C. Explain something based on rational thinking, which uses reasoned logic and well-supporting facts
- D. Attempt to explain something in a way that makes it seem true or proper even if the justification is illogical

What does it mean to **rationalize**?

- A. Establish something as true through careful consideration of facts and calculations.
- B. Deduce that something must be true after other considerations are proven wrong.
- C. Explain something based on rational thinking, which uses reasoned logic and well-supporting facts.
- D. Attempt to explain something in a way that makes it seem true or proper even if the justification is illogical.



The Scale of the Universe

SPACE & TIME

How many dimensions can we directly observe?

A. 2

B. 3

C. 4

D. 6

How many dimensions can we directly observe?

A. 2

B. 3

C. 4 (3 space, 1 time)

D. 6

The Scale of Space

<http://www.joshworth.com/a-tediously-accurate-map-of-the-solar-system/> (Links to an external site.)

<http://htwins.net/scale2/> (Links to an external site.)

These links are on Canvas, under “The Scale of Space”. Check them out and play around with them!

Scale of Time

How old is the universe?

- A. 4.6 billion years
- B. 4.6 billion light years
- C. 14 billion years
- D. 14 billion light years

How old is the universe?

- A. 4.6 billion years
- B. 4.6 billion light years
- C. 14 billion years
- D. 14 billion light years

How old is the Earth?

- A. 4.6 billion years
- B. 4 million years
- C. Same age as the universe
- D. About half the age of the universe

How old is the Earth?

- A. 4.6 billion years
- B. 4 million years
- C. Same age as the universe
- D. About half the age of the universe