



Creativity and Character Education




# Pythagorean Theorem

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# Storytelling for letters and equations

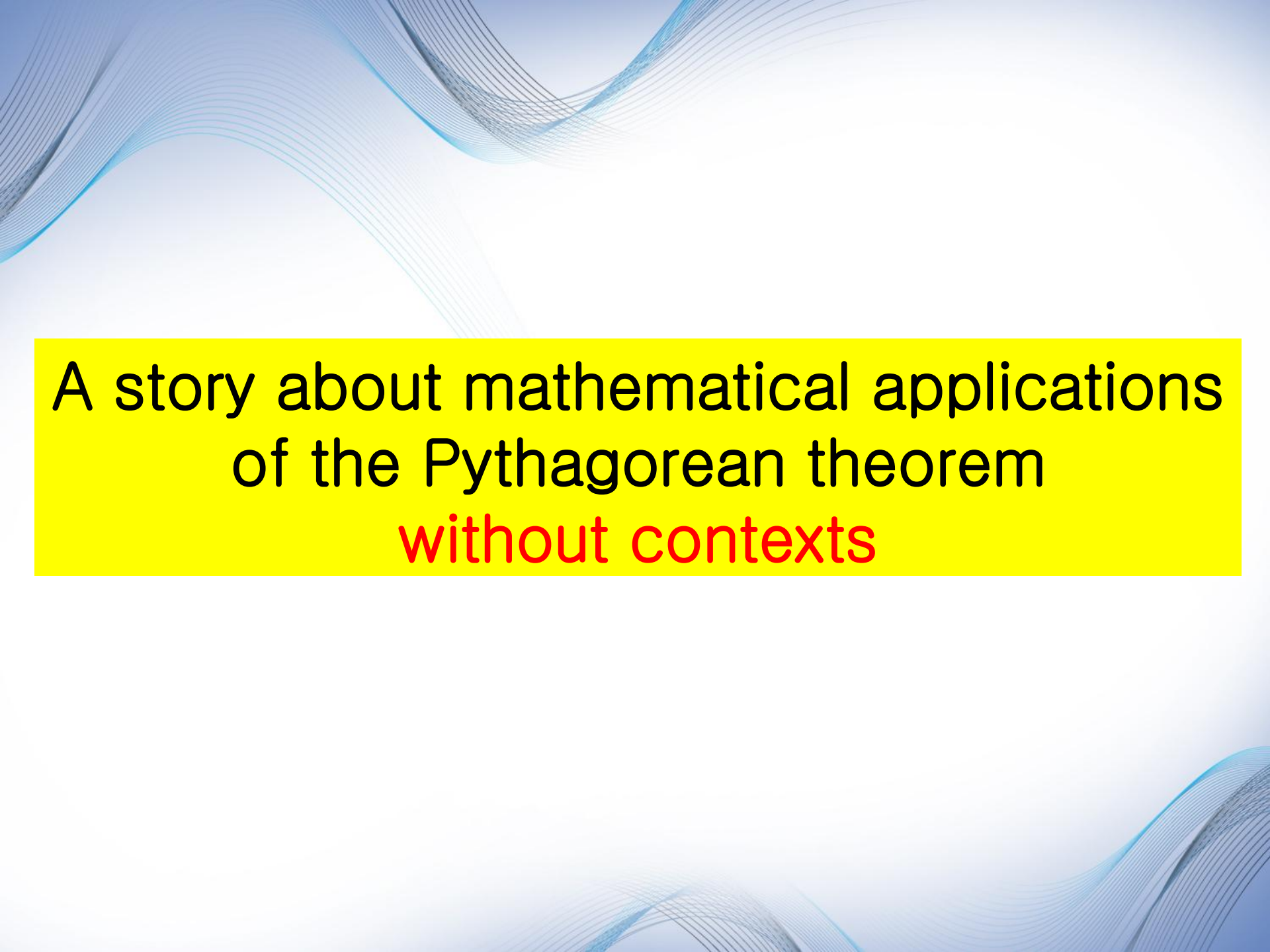
- **Making stories about advantages of using letters** to promote students' interest in mathematics
- **Making stories about rules for the use of letters** to make mathematics more accessible to students
- **Stories about the need for predication equations** to make mathematics more sensible
- **Stories about equations as effective models for real-life contexts** to be able to improve students' creativity in learning mathematics

# Storytelling for the Pythagorean theorem

- 1. A background story behind the Pythagorean theorem**  
- 2. Mathematical applications of the Pythagorean theorem in contexts**
- 3. Various proofs for the Pythagorean theorem** 
- 4. The Pythagorean theorem in real-world contexts**

# A background story behind the Pythagorean Theorem

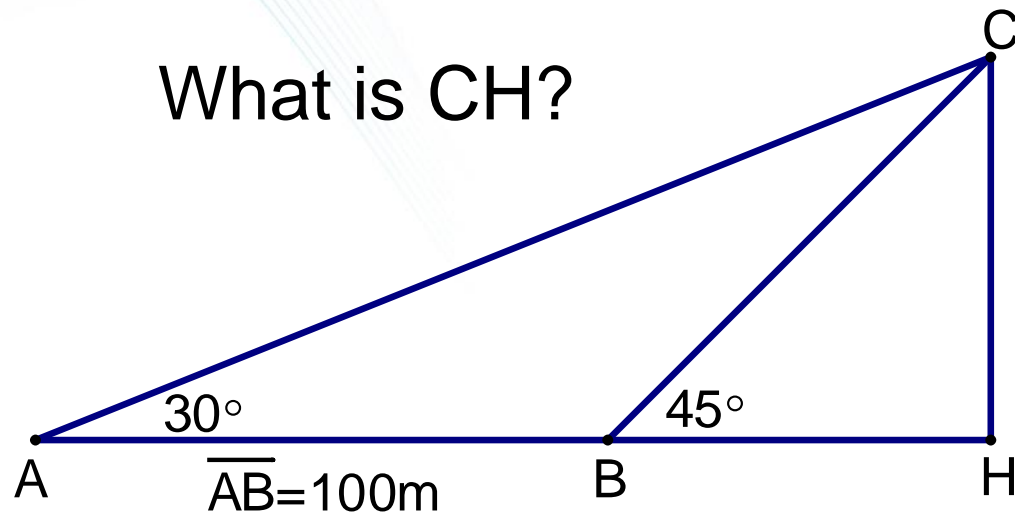
Story about its background  
(EBS, Civilization and mathematics 2: The Elements)



A story about mathematical applications  
of the Pythagorean theorem  
**without contexts**

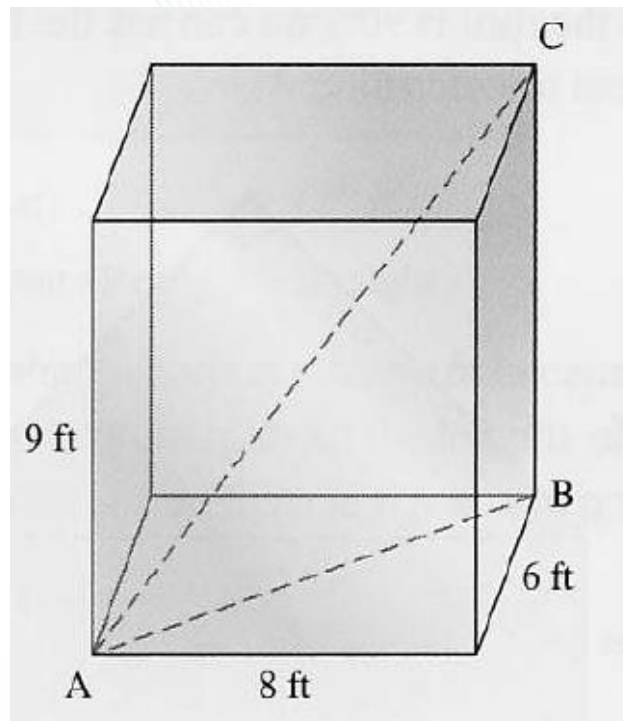


# Pythagorean theorem problem 1



# Pythagorean theorem problem 2

The height of an elevator is 9 feet, its width is 8 feet, and its depth is 6 feet. What is the longest length of a thin stick which fits into the inside of the elevator?



# Stories about mathematical applications of the Pythagorean theorem **in contexts!**

Stories about its mathematical applications in contexts  
(EBS, Secret of the Pythagorean Theorem: 2  $a^2 + b^2 = c^2$  and  
MATHEMATICA 1: The Pythagorean theorem 2)  
[Context 1](#), [context 2](#)



# Various proofs for the Pythagorean theorem

Story about its various proofs

(EBS, EBS, Secret of the Pythagorean Theorem:  $2a^2 + b^2 = c^2$ )



# The Pythagorean theorem in real-world contexts

Why **can** the Pythagorean theorem be applied to real-world contexts?

## Story about Samos

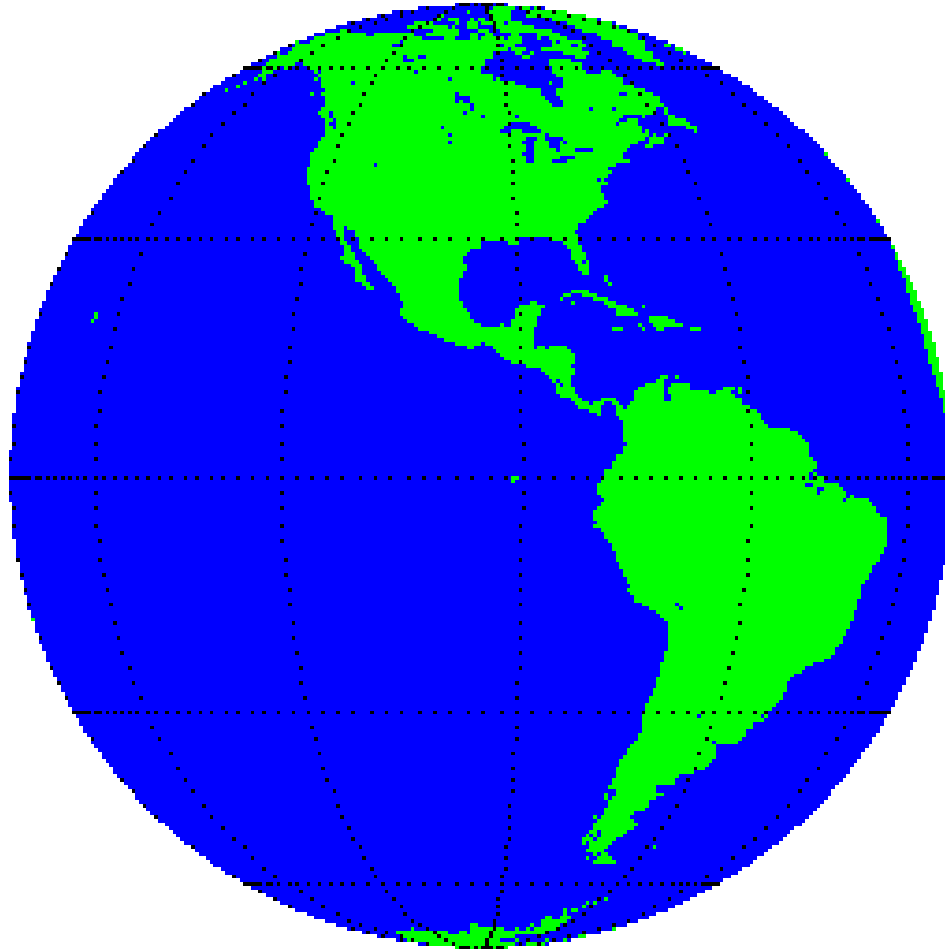
(EBS, Secret of the Pythagorean Theorem: 1. Track of triangle)

Problem: Solution

Why **can't** the Pythagorean theorem be applied to real-world contexts?

Story about its applications to real-world contexts  
(EBS, Secret of the Pythagorean Theorem: 3 Beetle on the World)

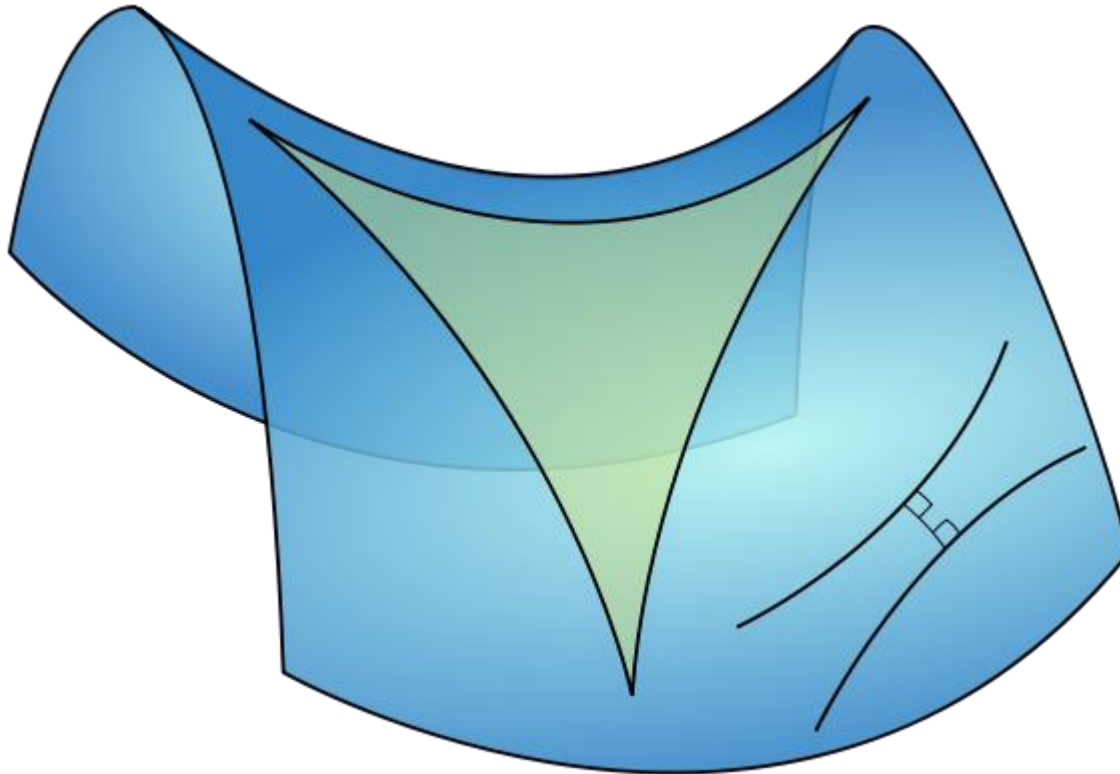
# Spherical geometry



<http://math.rice.edu/~pcmi/sphere/>



# Hyperbolic geometry



[http://en.wikipedia.org/wiki/Hyperbolic\\_geometry](http://en.wikipedia.org/wiki/Hyperbolic_geometry)

# Storytelling for the Pythagorean theorem

- **Stories about its background** to promote students' imagination and their interest in it
- **Stories about its mathematical applications in contexts** to make mathematics more sensible and thus more accessible to students
- **Stories about its various proofs** to make students have a deeper conceptual understanding of it
- **Two different stories about its real-world applications** to make students challenged and improve their creativity in learning mathematics

Q&A

The image features the text "Q&A" in a bold, 3D, green font. The letters are rendered with a slight shadow and depth, giving them a three-dimensional appearance. The background is a light blue gradient with several wavy, horizontal lines that create a sense of motion and depth. The overall aesthetic is clean and modern.