



A Nose of Gold

"I have found Tycho Brahe's lab notes," Professor Con said. "If you give me more money for research, I am sure that I can turn copper into gold. Your investment will **benefit** us both."

"Who is Tycho Brahe?" asked Susannah's father.

"Tycho Brahe was an astronomer and an alchemist. He was born in 1546 and died in 1601. He was from Denmark. He had an observatory and lab in Denmark's capital. That's where he made observations about the planets and tried to turn copper into gold," Professor Con answered.



Tycho Brahe

"Isn't Oslo the capital of Denmark?" asked Susannah.

Nodding at Susannah, Professor Con said, "That's right. Denmark's capital is Oslo. The capital borders the strait that separates Denmark from Sweden.

"It was the King of Denmark himself who provided Brahe's research funds. You see, Brahe lost his nose in a duel so he had to wear a replacement one. He had a replacement made of copper, but there was a problem with it. Copper melts at 1,083° Celsius, and so when Brahe would stand in direct sun too long or stand close to a hot fire, his nose would begin to melt! Brahe wanted a gold nose because a gold nose wouldn't melt. The problem was the expense. It cost too much to make a nose out of gold. That's when Brahe began to work on turning copper into gold. The king funded Brahe's work because if Brahe could find a way to turn copper into gold, then it would benefit the king. He could become rich."

"Is changing copper into gold really a possibility," asked Susannah's father. "If Brahe couldn't do it, what makes you think you can?"

"I can," Professor Con said with confidence. "Brahe left a chemical formula and instructions. The problem was that he didn't have the lab equipment that we have today." Holding out a piece of old, yellowed paper Professor Con said, "Take a look."

Both Susannah and her father leaned over the page the professor was showing them and read, "1 Cu + 4 Ir + 6 H (melted) = Go."

Professor Con explained, "Every element has a symbol. 'Cu' is the symbol for copper, 'Ir' is the symbol for iron, 'H' is the symbol for hydrogen, and 'Go' is the symbol for gold. Hydrogen is a gas, and Brahe didn't have the equipment to melt it. That's because hydrogen's melting point is -259° Celsius."

Susannah's father said slowly, "Being able to turn copper into gold would be to my benefit, but I'm having a hard time believing any of this. Your tale of a nose cut off in a duel and replaced with a copper one is pretty far-fetched."

Susannah said, "Dad, that part is believable, but trust me, you will not benefit if you invest in Professor Con's research. He doesn't know what he is talking about."

A Nose of Gold (cont.)

What does Susannah know that her father doesn't? It is time to check facts.



Dictionary

1. If something benefits you, it _____.
2. Why might a school hold a benefit spaghetti dinner? _____

Atlas



Find a map of Denmark. Write **True** or **False**. If your answer is **False**, cross out the incorrect word(s) and write the correct word(s) on the line.

1. Denmark's capital is Oslo. _____
2. The capital borders the strait that separates Denmark and Sweden. _____



Image Search

Key Words:  Tycho Brache nose

Can you tell if Brache found a replacement for his nose? **Yes** **No**

Temperature Converter



Find the melting points of copper and hydrogen in degrees Fahrenheit. Then tell how these temperatures compare to the temperature on a hot day.

		Celsius	Fahrenheit	How compares?
1.	Copper	1,083°		
2.	Hydrogen	-259°		

Search Engine/Encyclopedia



Look up the chemical symbols for the following:

1. Copper _____
2. Iron _____
3. Hydrogen _____
4. Gold _____

In Your Own Words

On a separate piece of paper, write one or two paragraphs in which you explain why someone should or should not invest in Professor Con's research. When you write, try to use the word *benefit* at least one time.

Answer Key

Fact Find #1: Nightingale Floors

Thesaurus

1. Possible answers include *odd*, *different*, and *strange*.
2. Possible answers include *typical*, *ordinary*, and *usual*.
3. turns it into its opposite (an antonym)

Image Search

1. Blarney
2. Blarney
3. No, it would be too heavy.

Search Engine/Encyclopedia

1. Tokyo
2. Dublin
3. The castles are not in the capital cities.

Fact Find #2: A Nose of Gold

Dictionary

1. helps you or is good for you
2. to raise money

Atlas

1. False, Oslo, Copenhagen
2. True

Image Search: Yes

Temperature Converter

1. 1,981°F; much hotter
2. -434°F; much colder

Search Engine/Encyclopedia

1. Copper — Cu
2. Iron — Fe
3. Hydrogen — H
4. Gold — Au

Fact Find #3: The Lost City

Dictionary

1. human history, past cultures, and the way people lived
2. C

Image Search

1. cut out of rock, colorful, columns
2. narrow, tall, rocky sides

Atlas

1. Yes
2. Yes

Search Engine/Encyclopedia: right to left, top to bottom

Currency Exchange: Answers depend on the current exchange rate.

Fact Find #4: Visitor from Argentina

Thesaurus

1. huge, boundless, big, gigantic
2. Answers will vary.

Atlas

1. True
2. False, Argentina, Brazil
3. False, Pacific, Atlantic

Translator

1. I am so glad to be here today
2. giant anteater
3. anfibio = amphibian; mamífero = mammal; meant to say *mamífero*

Metric Converter

1. 39 to 47 inches
2. 27.5 or 28 to 35 inches
3. 23.6 or 24 inches

Image Search: Answers will vary.

Fact Find #5: The Alibi

Thesaurus

1. C

Image Search: beak should be longer than head

Temperature Converter

1. Yes

Calculator

1. B
2. C

Search Engine/Encyclopedia: Answers will vary, but the difference between the two times will be 16 or 17 hours.

Fact Find #6: Falling Faster than Sound

Dictionary

1. to fall or drop straight down at high speed

Calculator:

1. 19.47 miles
2. 229 mph

Image Search: Baumgartner's