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HISPANIC HERITAGE MONTH

Guillermo González Camarena

The Young Mexican Inventor Who Added Color to TV

From Scrap Parts to Color Television

Guillermo González Camarena was born in Guadalajara, Mexico, in 1917. As a boy he was fascinated by electricity. He collected parts from junk shops and built his own radio equipment in the basement of his family's house — years before most people had ever seen a television.

In the 1930s, television existed, but every picture was black, white, and gray. Guillermo wanted color. He studied how the eye sees color and realized something useful: almost every color a person can see can be made by mixing just three — red, green, and blue.

His invention was called a **sequential field system**. Instead of showing all three colors at once, it showed a red picture, then a green picture, then a blue picture, switching so fast that the human eye blended them into one full-color image. He filed for a **patent** in 1940, when he was only 23 years old, and received patents in both Mexico and the United States.

Guillermo went on to make some of the first color television broadcasts in Mexico. He also used television to send lessons to students in faraway villages — one of the earliest uses of TV for teaching.

WORDS TO KNOW

- **patent:** An official document proving you invented something new, so others cannot copy it without permission.
- **sequential:** Happening one after another in order, rather than all at the same time.
- **primary colors of light:** Red, green, and blue — the three colors of light that can be mixed to make nearly every other color.

Part 1 • Reading Comprehension

1. Where and when was Guillermo González Camarena born?

2. What did television look like before his invention?

3. Which three colors did his system use, and why those three?

4. How old was Guillermo when he filed for his patent?

Part 2 • Color Investigation: Three Into Many

Guillermo's system worked because mixing three colors of light can produce many others. Try predicting the mixes. (If you have colored pencils, shade lightly and overlap them.)

1 What color do you get when you mix red light and green light?

2 What do you get when all three — red, green, and blue light — shine together at full strength?

3 Guillermo's system showed the three colors one at a time, very fast. Why did viewers see one full-color picture instead of a flashing red, green, and blue one?

Part 3 • Think About It

Guillermo used his television invention to send school lessons to students in faraway villages. What is one thing television could teach well, and one thing it would teach poorly? Explain.
