

# Digital Mood Ring – Python STEM and Coding Full Version

(~6 hours of class time)

## Getting Ready: Follow these step-by-step videos

Learn about the TI-Nspire CXII calculator ([watch video](#) ~6 min)

(optional) Write your first Python program on the TI-Nspire CXII ([watch video](#) ~12 min)

Interested in exploring more Python?

(optional) Check out the TI 10 Minutes of Code for Python lessons. ([web link](#))

(optional) See How Mood Rings Work ([watch video](#))

## Part 1: Exploring the science of color

Coding Challenge 1 Getting Started: Using the Color LED ([watch video](#) ~13 min)

(optional) Explore More: What is up with 255? ([watch video](#) ~9 min)

Science Activity 1 Exploring Color Mixing ([watch video](#) ~8 min)

Coding Challenge 2 Coding the Secondary Colors ([watch video](#) ~14 min)

Coding Challenge 3 Coding White and Shades of Gray ([watch video](#) ~10 min)

(optional) Explore More: The temperature of white light ([watch video](#) ~13 min)

Science Activity 2 The Electromagnetic Spectrum ([watch video](#) ~13 min)

Science Activity 3 Finding Your Favorite Color ([watch video](#) ~7 min)

(optional) Explore More: What is up with Indigo? ([watch video](#) ~11 min)

Coding Challenge 4 Coding Your Favorite Color ([watch video](#) ~6 min)

Science Activity 4 and Coding Challenge 5 Coding the Mood Ring Colors ([watch video](#) ~16 min)

## Deeper dive into the science of color

Science Activity 5 How does an LED Work ([watch video](#) ~17 min)

Science Activity 6 How the Human Eye Works ([watch video](#) ~4 min)

Science Activity 7 The Physics of White Light ([watch video](#) ~6 min)

Science Activity 8 Color Perception ([watch video](#) ~6 min)

Science Activity 9 Art and Technology ([watch video](#) ~9 min)

## Part 2: Coding your ring

Coding Challenges 6 and 7 Displaying the Mood Messages ([watch video](#) ~12 min)

Coding Challenge 8 Using the Temperature Sensor ([watch video](#) ~22 min)

Science Activity 10 Temperature and Heat ([watch video](#) ~7 min)

Coding Challenge 9 Going in Loops ([watch video](#) ~20 min)

Coding Challenge 10 Making Decisions ([watch video](#) ~31 min)

Coding Challenge 11 Putting it All Together ([watch video](#) ~15 min)

## Downloads: Student Files

Part 1: Exploring the science of color Student TI-Nspire ([download .tns file](#))

Part 2: Coding your ring Student TI-Nspire ([download .tns file](#))

Student Handout Part 1: Exploring the science of color ([download .pdf file](#))

Student Handout Part 2: Coding your ring ([download .pdf file](#))

Python Syntax Quick Reference for Mood Ring Project ([download .pdf file](#))

Student Mood Ring program planning table ([download .pdf file](#))