

WACKY SCIENCE MAGIC! PARENT LETTER

During our week, we won't be just regular guys and girls anymore. We'll be members of the OXYS (Only Excellent Youth Scientists). We are defenders of the truth, loyal to caring for our Earth and our natural resources. It is through science that we can protect and serve our planet and the life on it!

We will help defend the Earth against the evil Dr. Lipid and His Magical Ogres Reshaping our Natural Systems, otherwise known as the MORONS! They are always trying to destroy the environment.

DAY ONE: AND SO IT BEGINS!

On this day, we will take our OXYS Oath as defenders of the Earth! We are going to learn a lot of science magic to help us navigate Dr. Lipid's castle! There will be all sorts of science riddles and traps to figure out, so we'll have to think like scientists to successfully solve these. Along the way, we will learn and utilize our powers of Observation as part of the Scientific Process. For each trap and riddle, we will carefully watch the way something happens, or the way someone does something, especially in order to learn more about it.

Our first mission is to decode a secret message found outside of Dr. Lipid's Castle. The head of the OXYS must have been in his castle, and hid the message in invisible ink! It will be up to us to go into the castle and find out what Dr. Lipid is up to! We'll find ourselves in a dark dungeon hallway, and face to face with our first of many obstacles. We'll have to push two giant balls blocking our way without using our hands; knock down futuristic, flame-throwing mechanical knights using potential energy; and fool a motion detector by building a perpetual motion machine, for starters! At the end of the day, we will have made our way out of the dungeon into another room deeper within the castle.

OBJECTIVES TAUGHT ON DAY 1

- Newton's First and Third Law
- Potential and Kinetic Energy
- Vacuums
- Bernoulli's Principle
- Chemical Reactions
- Lab Safety
- Scientific Process
- Elliptical Path of a Pendulum
- Story Telling and Creativity

DAY TWO: ONWARD AND FORWARD!

To solve today's traps, we'll be using our scientific powers of Comparison and Prediction. With Comparison, we'll classify things by comparing their different characteristics. Through Prediction, we'll say what event or action will happen in the future based on our knowledge or previous experiences.

To get out of this new room in Dr. Lipid's castle, we'll get past a trap sound detector by finding ways to see sound vibrations; lift a jar without touching it or breaking it; roll a toxic waste barrel up a ramp by changing its center of gravity. Our final task will be to make indicators to know which barrels are full of toxic acids, and learn of ways to neutralize them to get a secret key!

OBJECTIVES TAUGHT ON DAY 2

- Sound vibrations
- Compression
- Critical thinking and communication skills
- Center of Gravity
- Acids and Bases
- Optical Illusions

DAY THREE: RIDDLE ME THIS!

In our last room, we found a key hidden in acid, and used the key to get out. Now we need to see what is behind the door of the new room. Today, we'll use our scientific powers of Conclusion to judge or decide something after some consideration.

Up first is a riddle to solve. Based on what we've learned before, we'll have to correctly answer the riddle's questions to enter the next room. Scary thing is, this new room is full of radioactive traps, so we have to solve them without releasing their dangerous radiation! We'll have to get a message out from under chips without them falling, and block glowing uranium by bending light with water.

To escape this section of the castle and get past snoring guards, we'll have to extinguish a candle using only a funnel and straw.

OBJECTIVES TAUGHT ON DAY 3

- Vacuums
- Inertia
- Friction
- Buoyancy
- Refraction
- Air Compression
- Scientific Process
- Story Telling and Creativity
- Oxygen in inhaled and exhaled air
- Chemical reactions
- Fuels
- Sound amplification
- Problem solving

- Air Expansion

DAY FOUR: ALMOST THERE!

Before we go into the room, we need to learn our last scientific power, the power of Communication. With Communication, we share information with others by speaking, writing, moving your body or using other signals. So far we have learned the powers: Observation, Comparison, Prediction, and Conclusion.

This will be one of the last rooms before we can escape the castle. Today, we'll find a way to light a candle without fire; defy gravity in order to fill an upside jar with water; and listen to the sound of ether!

OBJECTIVES TAUGHT ON DAY 4

- Thermodynamics
- Expansion
- Proof that there is not conservation of volume in reactions
- Electrostatic generation
- Non-Newtonian solids
- Air Pressure
- Optical Illusions
- Bernoulli's Principle
- Acting

DAY 5: THE SPECTACULAR FINALE!

We will explore the properties of Dry Ice and sublimation. We will learn how forces can work to make a catapult and jumping from to help us escape a room full of a non-Newtonian liquid. We will explore how air pressure can crush a can and make a magic potion out of pop rocks!!!

Using our five scientific powers, we will put on a magic show for you on the last day of camp! You'll get to see your son or daughter perform fantastic feats. I'd love to tell you what they'll do, but I don't want to spoil the surprise!

OBJECTIVES TAUGHT IN PART 5:

- Suspensions
- Forces on Materials (compression, tension, torsion, shearing)
- Properties of Materials (flexibility, stiffness, strength and tensile strength)
- Potential and Kinetic Energy
- Sublimation
- Physical Reactions

- Chemical Reactions
- Constants and Variables
- Atmospheric Pressure

We are going to have an awesome week! Your young scientist will get to experience science in action, and learn how to use it in amazing new ways! I can't wait to meet you and my future OXYS!

See you soon!