

MERGING
SCIENCE
SCRIPTURE &

Merging Science & Scripture

Mini Curriculum Download

with

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and

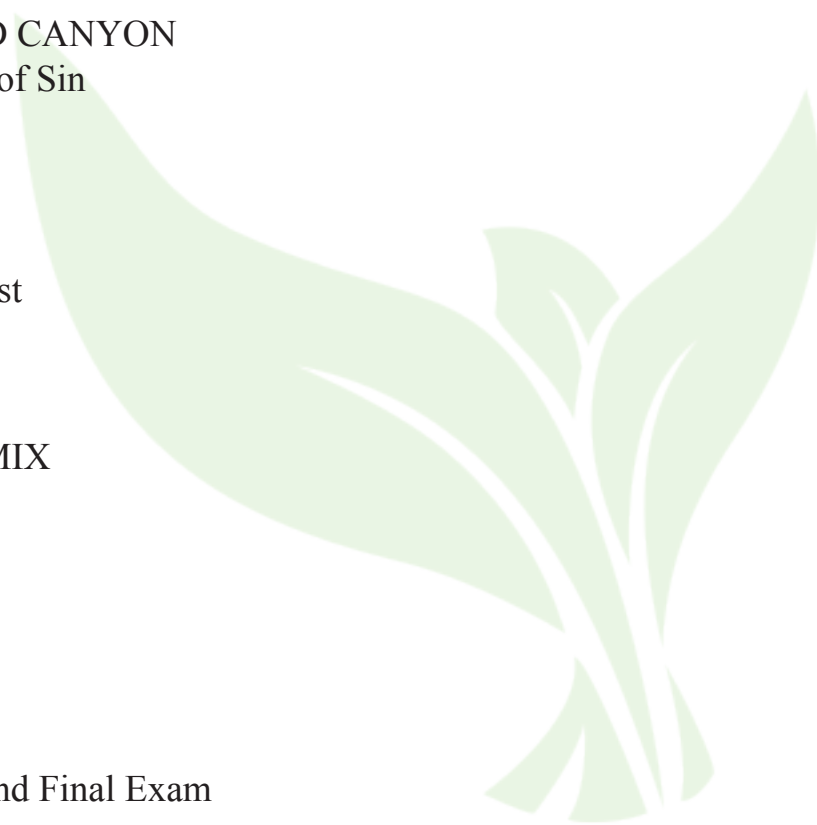
Ben Schettler of Ask or Think Ministries

Join Eric and Ben as they vividly demonstrate some of our Creator's scientific laws and scriptural applications with ten exciting experiments! Perfect for science classrooms, Sunday Schools, youth groups, and homeschool instruction, the memorable lessons liven up any class with eternally impacting truth!

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ANSWER KEY to Quizzes and Final Exam



1. AIR PRESSURE ON AN OBJECT

Not Conforming to This World

Things are steaming up in the Science Center as Eric and Ben create some implosions to teach us about air pressure!

REVIEW QUESTIONS / QUIZ:

1. How many pounds of pressure per square inch are pushing on us right now?
2. If a can of soda is 44 square inches, how many pounds of pressure is that?
3. If a paint can is 225 square inches how many pounds of pressure is that?
4. Why doesn't the can automatically implode?
5. What are the three states of water?

TRY THIS!

Fill a *soda can* with a little bit of *water* and place it on the *stove*, until it begins to steam. Using *metal tongs*, flip the can over quickly and carefully into some *ice water* and watch it implode!

This happens because the cool ice water causes the hot steam inside to condense into water. Since the water is much more dense than the steam, there's much less pressure inside the can all of the sudden, and the outside air pressure is enough to cause the can to implode.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- ROMANS 12:2
- GALATIANS 5:16

SPIRITUAL APPLICATION:

When things implode, they are no longer filled but empty. We need to be filled with the Holy Spirit to be on fire for God! Otherwise the pressures of the world will cause us to implode spiritually.

- 1. Are there pressures in your life to make you conform to the world instead of to God?*
- 2. Are you responding biblically to these pressures?*
- 3. What spiritual disciplines can help you walk in the spirit so you don't give in to the flesh?*

2. BOWLING BALL PENDULUM

Trusting God's Laws

Faith is on display in the Science Center as Eric and Ben explain what it really means to trust God's laws and act upon it.

REVIEW QUESTIONS / QUIZ:

1. Who made all the laws of Nature?
2. Do Scientists invent the laws of nature or discover the laws of nature?
3. What is the name of the scientist who discovered the Law of the Pendulum in 1602?
4. What does the Law of the Pendulum teach?
5. What practical use did the pendulum have in society for over 300 years?

TRY THIS!

Place *two chairs* back to back with a two-foot space between them. Lay a *yardstick or broom handle* on the backs of the two chairs, centered on the back of each. Cut one piece of *string* to a length of 2 feet. Cut another piece of *string* to a length of 1 foot.

Attach *5 washers* to the end of each string and tie the two lengths of string to the middle of the stick, spacing them about 8-10 inches apart. Hold the washers in each hand at the same angle to the stick. Using a *stopwatch*, time how long it takes each pendulum to swing back to its original position.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- HEBREWS 11:6
- JAMES 2:20

SPIRITUAL APPLICATION:

It's one thing to say that you trust God's laws. It's another thing to put your faith in it. Our faith in God is exhibited by obedience to His Word.

1. *Do you trust God's Laws?*
2. *What is the difference between faith and works?*
3. *How can you exhibit faith in your daily walk with God?*

3. FIRE TORNADO

Shining in the Vortex of Truth

Put on your safety goggles and hold onto your hats! Eric and Ben are going crazy in the Science Center and making tornadoes—with FIRE! Please, do NOT try this at home!

REVIEW QUESTIONS / QUIZ:

1. What does the word “Science” mean?
2. What happened to the fire before the screen was added?
3. What did the screen create?
4. How did the screen create a vortex?
5. What is a vortex?

TRY THIS!

Fill a *one-liter bottle* to the top with water. Place a *metal washer* on the mouth of the water bottle. Place an empty *one-liter bottle* on top of the water-filled bottle, so that the washer sits in place between the two. Use *duct tape* to hold the washer and bottles in place making sure that the connection is as sturdy as possible. Turn the bottles over so that the filled bottle is on top and swirl the water. The water will form a tornado and drain into the other bottle.

Twist of Color: Add 2 ounces of colored *lamp oil* to the water at the beginning of the experiment. The oil will float on the surface of the water because oil is less dense than water.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- MATTHEW 5:15-16

SPIRITUAL APPLICATION:

As Christians we are to be cities set on a hill as we let our lights shine before men. But many of us are like the fire that was spinning without direction or purpose and our witness is affected by it. But when we shine in the context of verified truth, it is amazing how much farther our message goes. Putting it under a bushel and depriving the flame of oxygen will put it out altogether. We need the Holy Spirit in our lives, our work, and our witness.

- 1. Is your spiritual life a vortex of truth or does it seem to be sputtering along?*
- 2. Are you sharing the Gospel with others or hiding your light under a bushel?*
- 3. How can you deliberately fan the flame of truth in your life?*

4. BUILDING THE GRAND CANYON

The Destructive Nature of Sin

The Science Center is about to be flooded with good science as Eric and Ben demonstrate what it takes to create canyons and other geologic structures that we find all over the world today!

REVIEW QUESTIONS / QUIZ:

1. When the Colorado River enters the Grand Canyon it is how many feet above sea level?
2. When it exits the Grand Canyon, the river has dropped how many feet?
3. How high is the ground in the middle?
4. What was the name of the huge dam that once spanned the Grand Canyon?
5. Was the Grand Canyon created by a LITTLE bit of water over a LONG period of time or a LOT of water over a LITTLE bit of time?

TRY THIS!

Create your own canyon with a little sand, water, and elevation! Pack the *sand* tightly into a *plastic container* until it forms a “brick”. Elevate one end of a *cookie sheet* and place the other end on another *cookie sheet* to catch the excess water. Using a *drinking glass or pitcher*, begin pouring water slowly onto the middle of the sand brick until rivers and canyons emerge.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- JAMES 1:14-15

SPIRITUAL APPLICATION:

Sometimes we allow little sins to build up in our lives and we excuse them because they are seemingly insignificant. But just as a little water seems innocent and harmless but can become a deadly destructive force, so the sins in our lives can be just as destructive.

1. *Are there sins in your life that you are unwilling to confess and forsake?*
2. *Think back to a time when a seemingly insignificant sin wreaked a lot of havoc in your life.*
3. *How can you keep little sins from building up into a monstrous deluge?*



5. GYROSCOPE

Spiritual Momentum

Eric and Ben get things spinning in the Science Center as we discover how gyroscopes build momentum and quickly go from no energy to potential energy and then useful energy.

REVIEW QUESTIONS / QUIZ:

1. What is a gyroscope?
2. What is inside the tire to make it heavier and more powerful?
3. Before a gyroscope begins spinning it has what kind of energy?
4. After a gyroscope begins spinning it has what kind of energy?
5. If you use a gyroscope while it is spinning it has what kind of energy?

TRY THIS!

Create your own gyroscope from a *bicycle wheel with two handles!* Using a *rotating chair*, spin the bicycle wheel and carefully hand it to a *victim* sitting in the chair. As the victim tilts the bicycle wheel to the right or the left they will be surprised to find that the spinning wheel causes them to rotate in the direction in which they turn the wheel! This keeps the total angular momentum of the system involving the victim, the stool, and the bicycle wheel the same.

Variation: Hang a *rope* with a loop or hook to a *sturdy beam, tree branch, or basketball hoop*. Demonstrate how the wheel hangs straight down when it is suspended but when the wheel begins spinning, it appears to defy gravity!

Purchase an old fashioned gyroscope toy from The Creation Store:
creationtoday.org/product/precision-gyroscope/

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- 1 PETER 2:2-3

SPIRITUAL APPLICATION:

As Christians we can only gain momentum spiritually by making sure that we are firmly founded upon the Word of God and filled with His Holy Spirit.

1. *What kind of spiritual momentum do you have? No energy, potential energy, or useful energy?*
2. *What are the best tools to help you grow into a useful Christian?*
3. *In what ways have you experienced the goodness of God in your life?*

6. HOT AIR EXPERIMENT

All Things through Christ

There's a competition waging in the Science Room as Eric and Ben try to discover who has the most hot air! Is it cheating when you know a scientific principle that can help you win?

REVIEW QUESTIONS / QUIZ:

1. Moving fluid has more or less pressure?
2. Who discovered this principle?
3. What do low pressure zones create?
4. Is it cheating to use a scientific principle to help you win?
5. How does this principle affect the study of aviation?

TRY THIS!

All you need is a *diaper genie refill kit* and a *friend* to duplicate this experiment! To begin, tie a knot at one end of the bag and invite your friend to blow up the bag like a balloon. Make sure and keep track of how many breaths it takes. Then, let all of the air out of the bag.

Now it's your turn. As your friend holds the closed end of the bag horizontally you hold the open end approximately 10 inches away from your mouth. Using only one breath, blow as hard as you can into the bag. Quickly seal the bag with your hand so that none of the air escapes.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- PHILIPPIANS 4:13
- II CORINTHIANS 3:5

SPIRITUAL APPLICATION:

In his epistle to the church in Philippi the Apostle Paul writes, “I can do all things,” but then he goes on and adds, “through Christ which strengtheneth me.” We can try and serve God all by ourselves but we need Jesus Christ and His Holy Spirit to strengthen us.

1. *Are you trying to serve God in your own strength or are you using His?*
2. *Think of an example from Scripture when someone trusted their own reasoning instead of waiting on God. How did that work out for them?*
3. *What spiritual disciplines can help us utilize the spiritual momentum Christ provides?*



7. SINK OR FLOAT?

Dangerous Worldview?

Things are going down in the Science Center as Eric and Ben compare regular soda to their diet counterparts. Which ones will sink and which ones will float?

REVIEW QUESTIONS / QUIZ:

1. Did the regular coke sink or float?
2. Did the diet coke sink or float?
3. Why did the regular coke sink?
4. Why did the diet coke float?
5. One can of regular coke has 45 grams of sugar which is the same as how many packets?

TRY THIS!

Collect a handful of items from around the room and test them to see if they will sink or float. Make it into a guessing game and you may be surprised at the results!

Things sink or float based on their density, not on their weight. Everything around us is made up of tiny molecules. In some objects those molecules are packed tightly together and in others they are loosely packed. The tightly packed molecules create a higher density making it harder for the object to float.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- I TIMOTHY 6:20
- II TIMOTHY 2:15

SPIRITUAL APPLICATION:

Just like the coke in this experiment some worldviews may appear harmless until you get a closer look. If you think that there is no God and that you are only an animal, you will start behaving like one and that is dangerous. Don't let your worldview weigh you down!

1. *Why is the atheistic worldview dangerous?*
2. *What other worldviews can weigh you down spiritually?*
3. *How can we rightly compare worldviews to make sure they are true?*

8. THINGS THAT DON'T MIX

Waiting on the Lord

CAUTION: *Eric and Ben are duking it out in the Science Center as they experiment with things that do not mix!*

REVIEW QUESTIONS / QUIZ:

1. What kind of molecule is water?
2. What kind of molecule is oil?
3. What happened when they shook the bottle?
4. Why did the molecules separate after being mixed?
5. What other things can you think of that don't mix?

TRY THIS!

Begin with a *bottle or jar* that is filled halfway with *water*. Add a few drops of *food coloring* and shake to mix. Now add a little *oil* and shake again. Set the bottle down and watch it separate. Use a *flashlight* to enhance the viewing experience.

Variation: drop in a half tablet of *Alka Seltzer* to make your own groovy lava lamp.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- ISAIAH 40:31
- PSALM 119:71

SPIRITUAL APPLICATION:

Even Christians can get their worldview shaken but God's Word promises that those who wait upon the Lord will renew their strength. Trust in Him and allow His Word to separate the truth from error in your life.

- 1. How do you react when your life is shaken by tragedy or adversity?*
- 2. Are you trusting His Word to separate the truth from error in your life?*
- 3. How will waiting on the Lord and trusting in His Word keep you from stumbling spiritually?*

9. SPILL PROOF COFFEE

Absorbing Truth

Today's experiment is going to make us rich! No more hassle with coffee lids that don't work, Eric has invented coffee that is Spill-Proof. This is genius! Or is it?

REVIEW QUESTIONS / QUIZ:

1. What did Eric put in his coffee instead of sugar?
2. How much liquid will 1 tsp of Super polymer absorb?
3. What are some practical uses for super polymer?
4. How long did the water take to solidify?
5. What can be used to reverse the effects of the polymer?

TRY THIS!

Determine the amount of water a *disposable diaper* can hold by slowly pouring about *1/4 cup of warm tap water* into the center of the diaper. Hold the diaper over a *dishpan or sink* and continue to add increments of water. Tip the diaper back and forth each time. Record the amount of water the diaper holds before it becomes saturated and steadily leaks. Try testing *different brands* of diapers.

Variation: Find the hidden polymer by placing a new *diaper* on a piece of *black paper*. Using an *Exacto knife* carefully cut through the cotton lining and remove all of the stuffing material. Put this cotton-like material into a clean, *Ziplock bag*. You should be able to see and feel traces of the polymer. Shake the bag for a few minutes to remove the polymer powder from the cotton then remove the cotton from the bag and measure the amount of polymer that you extracted. If you like, add *4 ounces of warm water* to the bag and see how long it takes to gel the water.

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- 1 CORINTHIANS 2:14
- JOHN 1:5

SPIRITUAL APPLICATION:

The natural man is not able to receive the things of God. When the Holy Spirit comes into our lives we are able to absorb truth the skeptic cannot understand. Only His Word and Spirit can solidify our faith.

- 1. Why is it hard for atheists and skeptics to understand the things of God?*
- 2. How can you solidify your faith in God?*
- 3. Are you absorbing truth through the power of the Holy Spirit?*

10. AIR CANNONS

Filled with the Spirit

The Science Center is going up in smoke as Eric and Ben have fun with donut shaped smoke rings.

REVIEW QUESTIONS / QUIZ:

1. What was coming out of the air cannons?
2. What is the mathematical shape of a donut?
3. What makes the torus visible?
4. Does a larger air cannon change the shape of the torus?
5. What other objects are shaped like a torus?

TRY THIS!

Cut a 1" circle on the bottom of a *Red Solo Cup*. Place a *ziplock bag* on top of the cup and secure it snugly in place with a *rubber band*. Use your finger and thumb to flick the bag and feel the effects of your miniature air cannon. Have fun blowing *bits of paper or ping-pong balls* across the table!

Variation: Play a table game with your air cannons and a ping-pong ball. Divide 8 people into two teams and give them each an air cannon. Put two people from Team A and two people from Team B on each of the long sides of the table, alternating the teams. (A, B, A, B on the left side) and (B, A, B, A on the right side.) Using their cannons, Team A should try to blow the ball to the north end of the table while Team B tries to get the ball to go south. No touching the ball with your hands!

WHAT HAPPENED?

Draw a picture or write a paragraph explaining what you did and how it applies to the spiritual principle in this lesson.

INVESTIGATE:

- MARK 16:15
- EPHESIANS 5:18

SPIRITUAL APPLICATION:

Jesus told His disciples to go into all the world and preach the Gospel. But unless you are filled with His Holy Spirit you cannot give Him out to the world.

1. *Are you actively engaged in sharing the Gospel?*
2. *Who does Jesus want us to share the Gospel with?*
3. *In order to give the Gospel we need to be filled with what?*

Merging Science & Scripture *Answer Key*

1. AIR PRESSURE ON AN OBJECT *Not Conforming to This World*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. How many pounds of pressure per square inch are pushing on us right now? (14.7 lbs psi)
2. If a can of soda is 44 square inches, how many pounds of pressure is that? (650 lbs)
3. If a paint can is 225 square inches how many pounds of pressure is that? (3300 lbs)
4. Why doesn't the can automatically implode? (There's just as much pressure inside the can.)
5. What are the three states of water? (Solid, liquid, gas)

2. BOWLING BALL PENDULUM *Trusting God's Laws*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. Who made all the laws of Nature? (God)
2. Do Scientists invent the laws of nature or discover the laws of nature? (discover)
3. What is the name of the scientist who discovered the Law of the Pendulum in 1602? (Galileo)
4. What does the Law of the Pendulum teach? (If an object leaves a stationary point, when it comes back it cannot return farther than where it left, as long as no additional force is added.)
5. What practical use did the pendulum have in society for over 300 years? (keeping time)

3. FIRE TORNADO *Shining in the Vortex of Truth*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. What does the word "Science" mean? (knowledge)
2. What happened to the fire before the screen was added? (It spun out of control.)
3. What did the screen create? (a vortex)
4. How did the screen create a vortex? (It pulled the wind in sideways.)
5. What is a vortex? (a swirling object like a tornado or whirlpool)

4. BUILDING THE GRAND CANYON *The Destructive Nature of Sin*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. When the Colorado River enters the Grand Canyon it is how many feet above sea level? (2800)
2. When it exits the Grand Canyon, the river has dropped how many feet? (1,000)
3. How high is the ground in the middle? (approximately 7,000 feet)
4. What was the name of the huge dam that once spanned the Grand Canyon? (Kaibab uplift)
5. Was the Grand Canyon created by a LITTLE bit of water over a LONG period of time or a LOT of water over a LITTLE bit of time? (a lot of water over a little bit of time)

5. GYROSCOPE *Spiritual Momentum*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. What is a gyroscope? (rotating mechanism that is used to steer)
2. What is inside the tire to make it heavier and more powerful? (water)
3. Before a gyroscope begins spinning it has what kind of energy? (no energy)
4. After a gyroscope begins spinning it has what kind of energy? (potential energy)
5. If you use a gyroscope while it is spinning it has what kind of energy? (useful energy)

6. HOT AIR EXPERIMENT *All Things through Christ*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. Moving fluid has more or less pressure? (*less*)
2. Who discovered this principle? (*Bernoulli*)
3. What do low pressure zones create? (*momentum*)
4. Is it cheating to use a scientific principle to help you win? (*No*)
5. How does this principle affect the study of aviation? (*Moving fluid allows airplanes to remain suspended in the air without crashing.*)

7. SINK OR FLOAT? *Dangerous Worldview?*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. Did the regular coke sink or float? (*sink*)
2. Did the diet coke sink or float? (*float*)
3. Why did the regular coke sink? (*Sugar molecules dissolve and go in between the liquid molecules in the coke to weigh it down.*)
4. Why did the diet coke float? (*There was no sugar to weigh it down, so the density inside the can was equivalent to the density of the water.*)
5. One can of regular coke has 45 grams of sugar which is the same as how many packets? (*18*)

8. THINGS THAT DON'T MIX *Waiting on the Lord*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. What kind of molecule is water? (*polarized*)
2. What kind of molecule is oil? (*non-polarized*)
3. What happened when they shook the bottle? (*the molecules mixed*)
4. Why did the molecules separate after being mixed? (*The water molecules are electrically charged and are attracted to each other, leaving the oil molecules clumped together.*)
5. What other things can you think of that don't mix? (*light and darkness; truth and error; etc...*)

9. SPILL PROOF COFFEE *Absorbing Truth*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. What did Eric put in his coffee instead of sugar? (*super polymer*)
2. How much liquid will 1 tsp of Super polymer absorb? (*300 tsp*)
3. What are some practical uses for super polymer? (*diapers, dry soil, floral arrangements*)
4. How long did the water take to solidify? (*instantly*)
5. What can be used to reverse the effects of the polymer? (*salt*)

10. AIR CANNONS *Filled with the Spirit*

REVIEW QUESTIONS / QUIZ ANSWERS:

1. What was coming out of the air cannons? (*donut shaped smoke rings*)
2. What is the mathematical shape of a donut? (*torus*)
3. What makes the torus visible? (*fog*)
4. Does a larger air cannon change the shape of the torus? (*No, it just gets bigger.*)
5. What other objects are shaped like a torus? (*various replies; examples donut, tire, wedding band, etc.*)