

Human Body Unit Study for Coop

September:

Overview; Cells; Respiratory

October:

Circulatory System

November:

Digestive

January:

Excretory; Endocrine; Skeletal

February:

Skeletal; Muscular

March:

CNS/brain

April:

Senses

Lesson #1: General View of Body

Read aloud The House We Live In pg. 8.

Name body parts

Head

Trunk

Two Arms

Two Legs

Head--Skull, face, forehead, temples, cheeks, eyes, ears, nose, mouth and chin.

Trunk--Chest, abdomen, backbone

Arm--Shoulder, upper arm, forearm, wrist, hand, fingers,
thumb

Leg--Thigh, hip, lower leg, ankle, foot, toes

Body covered by skin.

Inside: Read *The House We Live In* pg. 9-10

Arms & Legs: Muscle, bone, fat, blood

Head: Brain, blood

Trunk: Heart, Lungs, stomach, liver, pancreas, gall bladder, large intestine, small intestine.

Cut out Body and tape together.

Sing Spanish: "Cabeza, Hombres, Piernas, Pies."

Recite Romans 12:4-5. Discuss meaning of verse. Our year's memory verse.

Lesson #2: Cells, Tissues, Organs, Systems

Sing Lyrical Life Science Song

Read DK Guide to Human Body pg. 4-5 aloud and look at pictures.

Read aloud library book on cells.

Make Cell Model.

Sandwich bag with little things as parts of cell.

Talk about parts of cell.

Discuss DNA and nucleus (brain)

Read About Your Body (one of children read; another explain)

Read Lyrical Life Science pg.5-7 and fill out work book pages.

BIBLE: Read and recite Romans 12:4-5. Cell can be own organism (ameba) or part of a greater organism (blood cell or muscle cell).

Lesson # 3 Cells, Tissues, Organs, Systems

Sing Lyrical Life Science Song.

Explain Cell, Tissue, Organ, System.

Red Lifesavers: Red Blood Cells

Show picture from *The How & Why of the Human Body*

pg. 5.

Make cartilage tissue by gluing black-eyed peas together (tightly) on square.

Read Blood & Guts pg. 71-74

Take temperatures on each other. (pg. 73)

BIBLE: Recite Romans 12:4-5.

Read Ephesians 4:1-16.

Jesus is our DNA (Galations 2:20). All part of the same body (like cells) with the same DNA.

Specialization. Purpose. Gifting.

Diversity and Unity.

Lesson #4 Respiratory System

Sing Lyrical Life Science Song.

Read My Body pg. 30-32.

Color and cut out lungs. Paste trachea to body, not lungs.

Read DK Guide to the Human Body pg. 40-43.

Discuss Breathing----Lungs

Respiration----Mitochondria

Show DK Breathing Lung "Full of Air".

Lay down and take turns counting respirations. While laying down, listen to My Listening Ears pg. 49-53.

Exercise hard and then lay down and take respirations again.

"Why do respirations increase when you exercise?" "What is your body trying to do?"

BIBLE: Recite Romans 12:4-5.

Read John 3:5-8. How is the Holy Spirit like the wind? What does it mean to be born of the Spirit?

Lesson #5 Respiratory System

Sing Lyrical Life Science Song.

Read Lyrical Life Science pg. 65-67.

Do worksheets.

Skit: One person is air and others are parts of respiratory system doing their job.

Do "Take a Breather" and label Respiratory System picture.

BIBLE: Recite Romans 12:4-5.

Review Ephesians 4 and 5 and Read Ephesians 5:18--20.

Oxygen=Holy Spirit

Carbon Dioxide=Sinful behavior.

Inhale Holy Spirit.

Exhale deeds of darkness.

Then down in spirit (mitochondria), empowering of Holy Spirit takes place in your life.

Good things go out too in air we exhale. Also exhale songs, spiritual songs and thankfulness.

Lesson #6 Respiratory System

Sing Lyrical Life Science song.

Read Blood and Guts pg. 59-70

Do Percussing (pg.60)

Do Nose and Throat Connection (pg. 67)

Do Hold Your Tongue (pg.69)

Do Model Lung (pg.62) OR Do Lung Model from Human

Body for Every Kid (scissors, 2L soda bottle, 9 inch round balloon, rubber band, plastic trash bag, masking tape).

BIBLE: Recite Romans 12:4-5.

Read Romans 8:1-17. How does the Spirit make us alive and keep us alive? Explain Baptism of Holy Spirit and continuous being filled with the Spirit (Like breathing).

Lesson #7 Circulatory System & Heart

Sing Lyrical Life Science song.

Read My Body. Color and cut out Heart and paste to body.

Read My Listening Ear pg. 33-48.

DK 2 Pumps in One.

Read DK Guide to Human Body pg. 28-37. Look carefully at pictures.

Complete "What is Blood?" worksheets.

Listen to heart with Stethoscope. Take resting pulse. Take pulse after vigorous exercise. Why does pulse rate go up while exercising? What is body trying to do?

BIBLE: Recite Romans 12:4-5.

Read and explain Hebrews 9:11-28. Without the shedding of blood, there is no forgiveness. What power does our blood have? What power does the blood of Jesus have?

Lesson #8 Circulatory System & Heart

Sing Lyrical Life Science Song.

Read Uncle Bob Talks to my Circulatory System with two people reading aloud.

Read Blood and Guts pg. 49-58.

Do Tennis Ball Squeeze (pg.50)

Do Tourniquet (pg. 54)

Do Under Your Tongue (pg.54)

Do Pulse Places in Body (pg. 55)

Do Heart Dissection (pg. 53)

BIBLE: Recite Romans 12:4-5.

Read John 6:25-59. What is Jesus talking about? What does it mean to drink His blood? What are the benefits that come through the blood of Jesus.
Worship for the Blood. Sing "Thank You for the Blood.

Lesson #9 Circulatory System & Heart

Sing Lyrical Life Science song.

Read Lyrical Life Science pgs. 53-57.
Do workbook pages.

Summarize Enjoying Good Health pgs. 16-25.
Explain: Target Heart Rate.

- Why exercise is good for heart.
- Difference betw aerobic ex and weight lifting.
- How diet affects heart.
- What cholesterol and plaque are and damage.
- How habits affect heart.
- A few diseases and surgeries.
- What blood pressure is.

Take blood pressure on each other.

List exercises that will keep heart healthy. Make a collage.

Read My Listening Ears pg. 83-86.
Waste products--->lactic acid & CO₂ go to brain---> drowsiness (sleep)

BIBLE: Recite Romans 12:4-5.
What are spiritual exercises that can keep our hearts healthy?
Prayer. Worship. Bible. Fellowship. Evangelism.

Lesson #10 Smoking's Effect on Respiratory and Circulatory System

Sing Lyrical Life Science first three songs.

Discuss Smoking.
Harms: Carbon monoxide--> poison

Increases nervous system, heart, blood pressure
Combines to Red blood cells to take place of O₂.
Carcinogens.
Harms those around smoker.
Smoker's Cough---> get rid of tar and mucous.
Normal=5% energy to breathe.
Smoker=80% energy to breathe.

Make anti-smoking poster.

BIBLE: Recite Romans 12:4-5.
Read I Corinthians 6:19-20. How does smoking dishonor God's temple? Discuss spiritual implications of addictions.

Lesson #11 Digestive System

Sing Lyrical Life Science Song.

Read My Listening Ears pg. 23-32.

Read DK Guide to Human Body pgs. 44-51. Look carefully at pictures.

Read My Body pgs. 23-29 & 11-13. Color and cut out body parts, writing a sentence of explanation for each organ about its role in digestion. Paste organs on body.

BIBLE: Recite Romans 12:4-5
Read I Peter 2:2-3. What are Christians supposed to do? What is pure spiritual milk?
Our bodies need food to maintain, repair and grow. We need spiritual food to maintain, heal and grow. Without spiritual food, we backslide.

Lesson #12 Digestive System

Sing Lyrical Life Science song.

Read Magic School Bus Dental Care pg.1-11.
Demonstrate brushing and flossing.
Color "Meet a Tooth."

Make Model of Tooth
Fill out Tooth about Teeth forms.
Make Model of Tooth.
Fill out Tooth about Teeth.
Tooth in Liquid (Tooth Decay)
Fill out Dental Record
Label Teeth.

BIBLE: Recite Romans 12:4-5.
Read Psalm 34. Discuss tasting and seeing that the Lord is good.

Lesson #13 Teeth & Tongue

Sing Lyrical Life Science song.

Read Blood & Guts pgs. 31-36
Casting (p. 32) (Clay, Paper, Tape, Paper Cup, Plaster of Paris)
Nippers, Rippers, Grinders (p.33)
Tooth Dissection (p.34)
Red Alert (p.36)

Read Blood & Guts pg. 78-79.
Starch & Spit Test (pg. 78)
Hand-out--Tongue and Taste Test
Put together Tongue.
Test Salt, Asprin, Lemon, Sweets.

BIBLE: Recite Romans 12:4-5
Read and discuss James 3. Why are words powerful. How is wisdom related to controlling your tongue?

Lesson #14 Digestive System

Sing Lyrical Life Science song.
Read Lyrical Life Science pg. 43-48 and do workbooks pgs.21-23.

Read Digestive Journey. Fill out workbook pages.
Make stomach model.

Read Digestion's Disgusting Natural Side Effects.

BIBLE: Recite Romans 12: 4-5

Read James 1:22-25. How are we to digest the Word of God? How is obedience like digestion?

Lesson #15 Digestive System

Sing Lyrical Life Science Song.

Review Food Pyramid.

Review Proteins, Carbohydrates, Fats, Water.

Review Vitamins and Minerals.

Fill out Nutrient Chart.

Read Blood and Guts pg. 75-82.

Test for Fat & Starch (pg. 79)

BIBLE: Recite Romans 12:4-5.

II Timothy 3:14-17. What is the Scripture used for in our lives?(teaching, rebuking, correcting, training) Give examples of each? (relate to protein, carbs, fats, etc.)

Lesson #16 Excretory System

Sing Lyrical Life Science Song

Read Lyrical Life Science pg.48-52 and do workbook pages 24-26.

Read My Body pg. 9-10. Color kidney and bladder; and glue to Body.

Glue parts of Excretory system to construction paper.

Read My Listening Ear pg. 55-60

Read DK Guide to Human Body pg. 52-53.

Read Blood & Guts pg. 83-86.

Kidney Dissection (pg. 86)

BIBLE: Recite Romans 12:4-5

Read I John 1:9. Confessing sins --- getting rid of waste products.

Lesson #17 Endocrine System

Sing Lyrical Life Science Song.

Read DK Guide to the Human Body

Lyrical Life Science pg. 69-71 and do workbook pages 36-38.

My Listening Ears pg. 61-76.

Explain "Fight or Flight."

BIBLE: Recite Romans 12:4-5.

Read James 4:7-10 and II Timothy 2:22-23. The Christian's response to Temptation:

FIGHT: Resist the Devil and he will flee. Draw near to God.

FLIGHT: Flee evil desires of youth. E.G. Joseph

Lesson #18 Skeletal System

Sing Lyrical Life Science Song.

Read My Body pg. 17-19. Color bones and attach to body.

Read My Listening Ears pg. 1-11

Read DK Guide to the Human Body and look at pictures.

Fill out Bone worksheets.

Show hinge joint.

BIBLE: Recite Romans 12:4-5

Bone makes up hard skeleton that gives shape and form. Gospel is skeletal backbone.

10 Commandments and Sermon on the Mount are the bones that give shape and structure.

Lesson #19 Skeletal System

Sing Lyrical Life Science Song
Read Lyrical Life Science pgs.8-15 and do workbook pages.

86. Tendon Action.

Read Blood and Guts pg. 21-30.
Knot a Bone (pg. 23)
Inside a Long Bone (pg. 27)
Thumbless Survival Test (pg.30)

Make a "Happy Bone Treat" with Vitamin D and calcium.

BIBLE: Recite Romans 12:4-5
Go over Gospel: God, Man, Jesus and Faith. Teach kids to draw diagram and to share using hand motions.

Lesson #20 Skeletal System

Sing Lyrical Life Science Song.

Discuss how to determine a skeleton's age and sex. Wider hip is woman.
At age 15, foot fully formed.
At age 25, collar bone fused to breastbone.
At age 40, 3/4 seams in skull coalesced.

Discuss bone growth and repair.
Youth = 100% bone replaced each year.
Adult = 18% bone replaced each year.
Children's bones are softer and more flexible (heal faster than adults)
Growth and repair like replacing bricks in a brick wall--not replace one row of bricks, but 1 brick at a time in random places.

Discuss bone diseases:
Osteoporosis, Rickets, Paget's Disease
Discuss bone injuries:
Dislocations, Sprains, Fractures

Discuss different types of fracture:

Simple

Compound

Comminuted

Greenstick

Multiple

Go over first aid for

Broken arm, broken leg, broken or injured back, injured neck.

Demonstrate and practice proper body mechanics for lifting, bending, etc.

BIBLE: Recite Romans 12:4-5

Protecting bones from injury. Protect Gospel and avoid legalism (false bones!)

Galatians 1:3-12.

Know law of God and obey it. Protect Sound doctrine.

I Timothy 4:12-16. Don't let anyone look down on you because you are young! Set an example!!!!

Lesson # 21 Muscular System

Sing Lyrical Life Science Song

We have over 600 muscles making up 40% of body's weight. Muscles use most of body's fuel.

Read My Body pg. 20-22. Color and attach muscles.

Read My Listening Ears pg. 13-16.

Read DK Guide to Human Body pg. 14-15 and look at pictures. Discuss skeletal muscle, smooth muscle, and cardiac muscle.

Show "Muscles work in pairs" card.

Make "Muscle Maker" and "Muscles Move Bones"

Fill out Muscle worksheets.

BIBLE: Recite Romans 12:4-5.

Read Ephesians 4:1-16. Movement in the Body of Christ requires smooth and willing cooperation of many parts submitting own strength to will of head (brain). If

one muscle is weak, it weakens its paired muscle as well. To strengthen one requires strengthening others as well.

Lesson # 22 Muscular System

Sing Lyrical Life Science Song.

Read Lyrical Life Science pg.16-21 and do workbook pages.

Muscle, Tendon and Joint Dissection

Read Blood and Guts pg. 37-48

Find Muscle Teams (pg. 38)

Calisthenics for face (pg. 45)

Flexercise (pg. 48)

Magnifying Muscles (pg. 40)

Hairpin Dance (pg. 43)

BIBLE: Recite Romans 12:4-5

Read Matthew 28:18-20. Command is to go. Be active. Kingdom is active. If we don't use muscles, they will atrophy and paralyze. The same with our spiritual muscles.

Lesson # 23 Muscular System

Sing Lyrical Life Science Song.

Exercise muscle = grow

No exercise or paralysis = atrophies.

Go over "Fine Motor and Gross Motor Development"

Go over "The Motor Sequence"

Joint surfaces don't really touch, float on jets of fluid. Joint cartilage filled with tiny channels full of synovial fluid that squirt out.

Exercise

Muscle strength = weight lifting

Muscle tone = aerobic/weight lifting

Muscle range of motion/flexibility = stretching

Stretching is actually the ability to stretch tendons.
Balance and coordination = balancing
Cardiac muscle strength = aerobic.

Demonstrate and practice all aspects of exercise discussed. Talk about lifetime exercise.

Muscle injury and disease:
Cramps = sudden contracting of muscle
Strains = muscle stretched or torn
Spasms = involuntary contraction of muscle
Tics = spasms in eye or cheek area
Poliomyelitis = nerves destroyed, wasting of muscle
Muscular Dystrophy = muscle waste or lack of strength
Cerebral Palsy = Brain damage--> lack of muscle control
Arthritis = friction at the joints.

BIBLE: Recite Romans 12: 4-5

Spiritual Arthritis (friction at joints--relationships), criticism, gossip, slander, hurt, bitterness.

Ephesians 4:25- 5:2

Lesson #24 Central Nervous System
Brain

Sing Lyrical Life Science Song.

Read My Body pg. 5-6. Color and attach brain.

Read My Listening Ears pg. 17-22 and 77-86.

Read DK Guide to the Human Body pg. 16-19 and look at pictures.

Do Nervous System worksheets.

BIBLE: Recite Romans 12:4-5.

Read Ephesians 4:15-16. Christ is the Head. How is Christ like our brain? He is the BOSS!

Lesson # 25 Central Nervous System

Brain

Sing Lyrical Life Science Song

Read Lyrical Life Science pg. 22-29 and do workbook pages 12-14.

Read Blood & Guts pg. 11-122.

Brain dissection (pg.115)

Knee Jerker (pg. 116)

Limb Levitation (pg.117)

Dollar Drop (pg. 117)

Muscle Learning (pg. 119)

Force of Habit (pg. 119)

Training Time (pg. 121)

Dominance Tests (pg. 121)

DK Cards:

Memory test

Memory Game

BIBLE: Recite Romans 12:4-5.

Ephesians 1:3-10. All things in Heaven and on earth will be under one head: Jesus!

Lesson #26 Central Nervous System

Brain

Sing Lyrical Life Science Song.

Read Uncle Bob Talks with my Central Nervous System aloud with kids playing parts.

Do Brain Puzzle and make Brain Hat.

DK Cards:

Balance

Balancing Test

Read Blood & Guts pg. 105-110.

Lag Behind Effect (pg. 107)

Upright without Sight (pg. 108)
Whirls (pg. 109)

BIBLE: Recite Romans 12:4-5.
Discuss need for balance in our spiritual/emotional/mental/ physical lives.

Lesson # 27 Sensory System

Sing Lyrical Life Science Song.

Read My Body pg. 33-36. Color and attach face.

Read DK Guide to the Human Body pg. 20-25 and look at pictures.

Do worksheets. And do Let's Investigate the Senses pg. 1-8.

Make Mouth Model and Map Your Tongue

BIBLE: Recite Romans 12:4-5
Sense of Taste = Taste and see that the Lord is good.
I Peter 2:2 and Psalm 34:8
Sense of Smell = We are the fragrance of Christ.
II Corinthians 2:14-16.

Lesson # 28 Sensory System

Taste, Touch & Smell

Sing Lyrical Life Science Song.

Read Lyrical Life Science pg. 30-35 and do workbook pages pg. 15-17.

DK Cards
Taste and Smell
Lemon-Potato Test
Touch
Texture Test
Fingerprints
Fingerprint Test

Read Blood & Guts pg. 11-20.

Evaporation (pg.12)
Quick Cool (pg. 12)
Map Back of Hand (pg. 16)

Do Let's Investigate the Senses Touch, Taste and Smell pages.

BIBLE: Recite Romans 12:4-5
Skin protects, counters, soft, protective covering--first line of defense.
Front line of Christianity is LOVE!
Love touches people. Love is touched by people (empathy).
I Peter 4:8.

Lesson #29 Sensory System

Eyes/Sight

Sing Lyrical Life Science Song.

Read Blood & Guts pg. 87-96
Eye on Ball (pg. 88)
Seeing is Believing (pg. 88)
Hole in Your Hand (Pg. 89)
Eye Dissection (Pg. 92)
And in this Corner (pg. 95)

Work on Our Sense of Sight and Eye worksheets.

BIBLE: Recite Romans 12:4-5.
Spiritual eyesight.
Hebrews 12:2-3. Fix our eyes on Jesus.

Lesson # 30 Sensory System

Ears/Hearing

Sing Lyrical Life Science Song.

Read Blood & Guts pg. 97-104
Tuning Fork Test (pg. 103)

Finish Let's Investigate the Senses workbook.

BIBLE: Recite Romans 12:4-5.

Spiritual Hearing.

I Samuel 3:1-21. We should be quick to listen to God!

James 1:19-20. Quick to listen to others.

Lesson # 31 Reproductive System

Sing Lyrical Life Science Song.

Read Life Before Birth: A Christian Family Book.

Read My Body pgs.

Read DK Guide to Human Body pg. 54-59 and look at pictures.

Read Lyrical Life Science pgs. 36-41 and do workbook pages 18-20.

Read Blood & Guts pgs. 123-127.

BIBLE: Recite Romans 12:4-5.

Matthew 28:18-20. Discuss Great Commission. Our bodies are designed to reproduce. Spiritually, we are designed to reproduce. Discuss witnessing and disciple making, especially through their cell group.

Lesson # 32 Growth & Aging

Sing Lyrical Life Science Songs

Read DK Guide to Human Body pg. 60 to end of book.

Look at DK Growth and Aging Poster and Chart.

Discuss changes as you grow to adulthood and as adults grow to old age. Death came into the world through sin, everything experiences slow dying.

BIBLE: Recite Romans 12:4-5

Read Genesis 3:1-24. How did death enter the world?

What would life be like originally in the Garden of Eden? What will life be like in Heaven? What things in our bodies are the result of sin? What things in our character and personality are the result of sin?

Lesson # 33 Immune & Lymph Systems

Sing Lyrical Life Science Song.

Read Germs Make Me Sick and Magic School Bus: Inside Ralphie: Book about Germs.

Read DK Guide to Human Body pg. 38-39 and look at pictures.

Read Lyrical Life Science pg. 58-63 and do workbook pgs 30-32.

BIBLE: Recite Romans 12:4-5.

Read Mark 8:22-26. What did Jesus do for the blind man? How is this healing different from the usual healings of Jesus?