



Saskatchewan Catholic Schools Curriculum Permeation

REVEALING CHRIST IN ALL WE TEACH

SCIENCE 3

2012

“Revealing Christ In All We Teach”

A Curriculum Permeation initiative of the Saskatchewan Catholic School Boards Association

Introduction:

“The Gospel spirit should be evident in a Christian way of thought and life which permeates all facets of the educational climate. Prime responsibility for creating this unique Christian school climate rests with the teachers, as individuals and as a community.” (The Religious Dimension of Education in a Catholic School, 1988 #25 -26.)

Teachers in Saskatchewan are mandated by the Ministry of Education to implement provincial curricula. Teachers in Saskatchewan Catholic Schools are further charged to utilize the “Revealing Christ in All We Teach” resources to permeate the Ministry curriculum with the Catholic world view.

Our Catholic schools seek to create a learning environment that reflects the identity and character of the Catholic Church. In each of our Catholic schools throughout Saskatchewan, we strive to become learning environments in which the uniqueness of our Catholic faith is expressed in all we do.

We believe that teaching in our Catholic schools is a ministry in which all are called to witness their faith. The teaching that occurs within our Catholic schools ought to reflect more than the content and objectives of the provincial curricula. In addition to these core fundamentals, we are called to infuse our Catholic beliefs and values in all subject areas.

In an ever-increasing secular world in which religious beliefs are dismissed, we must take up the challenge to see that the teaching of our Catholic values and beliefs are not limited to Religion and Christian Ethics classes alone, but are taught across the entire curricula. Our Catholic faith must permeate all subject areas! This undertaking is critical to the distinctiveness of Catholic education in Saskatchewan.

As Catholic educators, how do we permeate our Catholic teachings across the curricula? How do we, for example, discuss our church’s teachings on respect for the environment in science classes? How do we promote social justice in our studies of the humanities? How do we critique literary works through the eyes of our faith? In biology, how do we promote the sanctity of all human life, indeed, all of creation?

At the direction of the Saskatchewan Catholic School Boards Association, the following resource has been produced to assist teachers in the permeation of our Catholic faith across the curricula. A number of dedicated Catholic teachers in Saskatchewan have contributed to this resource by developing and sharing a variety of activities, lessons, and units for this purpose.

Please note: Teachers are invited to submit feedback and/or suggestions for additional faith permeation ideas to their Religious Education coordinator/consultant.



Saskatchewan Catholic Schools Curriculum Permeation

Science 3

Faith Permeation Essential Connections

Unit Theme: Plant Growth and Changes

In this unit students are expected to learn and appreciate parts of plants, how they grow, the way their lifecycles unfold, how they share characteristics with other living things, and interactions of animals, humans and plants. Suitable faith permeation connections to this science unit will explore ways that plants are part of God's living world, his plan for earth and ways that humans must protect the life and growth of plants on which humans depend.

Provincial Curriculum Outcomes and Indicators Addressed:

Outcome: PL3.1 Investigate the growth and development of plants, including the conditions necessary for germination.

- a. Pose questions related to plant growth (e.g. How do very young plants look different from grown plants? How much water do plants need to grow? Do all plants grow in the same way?).
- b. Observe and explain the function of the major structures (i.e., root, stem, flower, leaf, and fruit or seed) of a variety of plants.
- e. Observe and represent, using written language, pictures, and charts, changes that occur through the life cycle of a flowering plant.
- f. Compare the basic needs of plants to the basic needs of animals and humans.
- i. Care for a flowering plant throughout its life cycle, tracking its growth and changes.

Outcome: PL3.2 Analyze the interdependence among plants, individuals, society, and the environment.

- a. Observe, safely and respectfully, plants in local environments (e.g., classroom, flower garden, school yard, community garden, forest, field, park, and nature preserve).
- b. Research traditional and contemporary uses of plants or parts of plants, such as food, beverages, medicine, arts, seed banks, shade, wind breaks, erosion protection, cultural celebrations, and products like dyes, shelter, and clothing.

- e. Describe examples of plant biodiversity (e.g., trees, shrubs, bushes, herbs, grasses, vines, and mosses) in various ecosystems throughout the world.
- f. Explain how to determine whether plants are healthy and discuss the impacts of diseased plants on society and the environment.
- g. Describe ways that plants and animals depend on each other.
- i. Examine the type and quantity of plants and plant matter in the diets of people who live in various communities and/or represent various cultures.
- l. Imagine a world without plants and describe the impact on animals, people, and the environment.
- m. Respond to and acknowledge the ideas of others regarding the importance of plants to self and society.

Catholic Faith Focus for Learning:

This faith permeation unit will enable students to explore from a faith aspect the role of plants in God's creation and various adaptations that allow them to thrive. Students will appreciate how plants need other living things just as other living things need plants. Finally this faith permeation unit will endeavor to help students realize the necessity and responsibility that we have as good stewards of earth's gifts.

Catholic Faith Big Ideas (answers to the essential questions):

- **2415** The seventh commandment enjoins respect for the integrity of creation. Animals, like plants and inanimate beings, are by nature destined for the common good of past, present, and future humanity.¹⁹⁵ Use of the mineral, vegetable, and animal resources of the universe cannot be divorced from respect for moral imperatives. Man's dominion over inanimate and other living beings granted by the Creator is not absolute; it is limited by concern for the quality of life of his neighbor, including generations to come; it requires a religious respect for the integrity of creation.¹⁹⁶
- Care for God's creation is a central calling for believers. Agricultural and food policies should reward practices that protect human life, encourage soil conservation, improve water quality, protect wildlife, and maintain the diversity of the ecosystem. An essential measure of agricultural and food policies is whether they protect the environment and its diversity and promote sustainable agricultural practices in the United States and abroad. (Catholic Reflections on Food, Farmers, and Farmworkers (United States Conference of Catholic Bishops))
- The dominion granted by the Creator over the mineral, vegetable, and animal resources of the universe cannot be separated from respect for moral obligations, including those toward generations to come. (CCC #2456)

- We must re-establish the links with nature that we have damaged. We now know that we are tied much more closely to the environment in which we live than we had imagined. Our planet is a spacecraft on which we navigate together with the environment, for better and for worse. As Saint Paul says, “the whole creation has been groaning in labour pains until now,” in the hope “to be set free from its bondage to decay” (Romans 8.22 and 21). Is development that is more respectful of nature’s laws and rhythms not a first step toward its freedom? (Canadian Conference of Catholic Bishops-Our Relationship with the Environment: a need for conversion)

Catholic Faith Essential Skills:

- Students will learn how plants are part of God’s creation and his plan for the earth.
- Students will learn how animals, humans and other living things depend on the plants and how they depend on other living things.
- Students will learn that plants are gifts from God, to be protected for future generations and to be wisely used.

Catholic Faith Essential Questions:

- 1) How are plants a part of God’s plan for the earth?
- 2) How do living things, humans and plants depend on each other?
- 3) How can we be good stewards of earth’s plants?

Teacher Note:

These faith permeation lessons aim to follow and to complement three key sources: Fully Alive (FA), Pearson Saskatchewan Science 3 (PSS3) and In the Spirit We Belong year 3 (ISWB 3). When these resources are referenced in following lessons and mini-lessons they will be abbreviated.

Lesson 1: Plant Parts

Description:

This lesson uses lilies described in Matthew’s gospel to introduce parts of the plants in lesson 2 ‘Plant Parts’ of PSS3 pg. 8 and 9. The lilies provided by teachers will help students understand plant parts and provides an alternate choice of plant for students to study. This lesson function in conjunction with lesson 2 and accompanying activities on pg. 8 and 9 in PSS3. Also please note that ‘lilies’ mentioned in Matthew’s gospel translated into the Greek means wild flowers. True lilies didn’t grow in ancient Palestine and Israel.

Required time: 1 hour

Instructional Procedure:

- After students have read plants parts on pg. 8 in PSS3, read aloud the following scriptural passage from Matthew 6:28-29.

- Ask, “What kind of lily was Jesus talking about?” Follow up by asking, “Do these kinds of lilies grow in Saskatchewan?”
- Show students pictures of lilies from the Middle East from the websites listed below. NOTE: There are no lilies that live in Israel. In fact the Greek translation of ‘lily’ means wild flowers. There is considerable debate among biblical scholars and researchers about what kind of flowers Jesus was referring to. Therefore tell the students that ‘lily’ really means wild flower in translation and that our lilies look different from the ones in ancient Israel.

<http://www.padfield.com/2004/lilies.html>

<http://www.wildflowers.co.il/english/plantsIndex.asp>

- Have students illustrate the lilies you show them from the websites mentioned above.
- Have students compare the lilies from Israel with the ones you’ve provided for their lab.
- Modify lab in the activity ‘Work on it’ to include lilies. The activity suggests flowers but teachers may provide the students with lilies. The students will draw and label parts of their lily and they may compare the parts of the Israeli wild flowers they have drawn.
- Allot students time to work on their comparisons and provide time to clean up.

Lesson 2: Exploring Plant Parts

Description:

This lesson uses passage of John’s gospel (John 15:5): *I am the vine, you are the branches. Those who abide in me and I in them bear much fruit, because apart from me you can do nothing.* This lesson should be taught in conjunction with lesson 3 and accompanying labs on pg. 10 and 11 in PSS3.

Required time: 1 hour

Instructional Procedure:

- Read the intro ‘Get Started’ on pg. 10. Then read the passage John 15:5. Ask the following questions:
 - a) As we have learned about stems and plants and how they function to keep plants alive, why might Jesus say that he is the vine? (Answer: vines form the body of the plant that keep it alive and rooted in the soil. Jesus like the root keeps our spirit alive, nourishes us with faith and salvation and anchors us in a relationship with God.)
 - b) Why does Jesus say we are the branches? (Answer: Like the branches we grow from Jesus and receive nourishment from his teachings, his example, his body and blood and we live on through his death and resurrection.)

- c) What are the fruits we bear? (Answers: fruits borne from people who dwell in Jesus are the gospel virtues, hope, love, compassion, good works, peace etc.)
- Explain to the students that when they work on the “Get Started” activity on pg. 10, they should think about why the gospel writer John used the example of the vine to illustrate our faith and our life in Jesus.
 - As they work through the activity ‘Work on It’ have them think about what the celery stalk might represent? Ask students to consider the celery stem. How is Jesus like the celery stalk and we are the leaves at the top?
 - Ask the students to write a short reflection about what they how the celery stem might represent Jesus and how we are the leaves. Can the celery stalk represent other things in our lives like our families? Is the stalk our school communities or our faith communities? If they are, why are they like the stalk?

Lesson 3: Basic Needs- how plants, humans and other living things depend on each other

Description:

In this lesson students will appreciate how the needs of living things are met by the existence of other living things. This lesson should be taught in conjunction with lesson 5 “Basic Needs” in PSS3 pg. 14.

Required time: 1 hour

Instructional Procedure:

- In this lesson, students learn how plants and animals depend on each other. In the correlated lesson in PSS3 students learn how plants are useful and how plants and animals depend on each other. They learn the FNM lesson that all created things are gifts from the Creator.
- Ask: How does God want us to treat each other? How are we to treat other living things? Ask the children to consider how they depend on one another. Help student to realize that since humans and living systems are all part of God's creation, true interdependence means giving respect and taking care of all living things.
- Review the world view that First Nations and Metis people have regarding the natural world found on pg. 14 in PSS3. Express that like First Nations and Metis people, as Catholics we also believe that all living things on earth are gifts from God. Ask, “How are plants gifts from God?”
- Students may provide the following answers: They give us oxygen, fiber and other materials we need to make clothing, shelter and food to live.

- Pose the question, “Do all living things need the same things to survive?” Dress a list of needs that both plants and animals need.
- Ask, “Are there needs that are different?” Have students fill out the Venn diagram found on pg. 15 in PSS3.
- After the students have completed their Venn diagrams on pg. 15 for the ‘Work On It’ activity, ask the students to reflect on needs they have to survive. Ask, “How are your needs similar or different to those of plants?”
- Some suggestions that students might raise are: family, friends, and love.
- Ask, “Is there anything we need more than air, water, food, and shelter to survive?” Explore the friendship and love and friendship in Theme 2 Topic 2 'Family Love is Open' and Topic 5 'What is a Friend' in FA.

Lesson 4: Life Cycles

Description:

In lesson 7 ‘life cycles’ on pg. 18 students use a traditional medicine wheel to understand the stages of growth of plants. In this faith permeation lesson students compare human life stages to those of plants. The lesson centers around theme 3 ‘Beginning Life’ in the fully alive program.

Required time: 1 hour

Instructional Procedure:

- After students have complete activity ‘communicate’ on pg. 19 of PSS3, ask the question: “How might a plant’s life cycle be like a human life cycle?”
- Brainstorm ways that a human life cycle is similar to a plant life cycle.
- Have students compare stages of plant growth to those in people. Discuss that in our faith we believe that human life begins at conception. This correlates with theme 3 'Beginning Life' in FA.

Lesson 5: Field Trips

Description: This faith permeation lesson relates to lesson 10 ‘Take a Field Trip’ in PSS3 pg. 26.

Required time: 1 hour

Instructional Procedure:

- In this activity students explore a green space around the school, around the neighbourhood or on a field trip. Lesson 10 in PSS3 outlines some of the necessary guidelines that students must follow. Students are asked to respect Mother Earth, taking pictures only and leaving plants and flowers to grow and for others to enjoy.
- Students will bring along a field guide in which to record their findings.
- While students explore the plant life they see during their field trip, have them point out examples of variety of plants and plant parts. Students will record these into the field journal.
- As students are using their field guides and drawing their sketches, ask them to also describe what they thought about when they saw examples of God's creation. Relate their observations with passages that came from previous lessons. Were they able to see vines like the passage in John 15:5 or flowers like the wildflowers in Matthew 6:28-29 or perhaps seeds like the ones in the parable of the mustard seed?
- Provide students with these biblical plant references before students begin their field trip.
- When students are done their excursion, collect photos of plants and plant parts that students have collected. After enlarging these photos, students may create posters. Under the photos students may copy out segments of their journal, provide the scientific concept or definition could be given as well as an accompanying scriptural passage.

Lesson 6: Plants are Food for the World

Description: This lesson coincides with lesson 12 in PSS3 pg. 30.

Required time: 1 hour

Instructional Procedure:

- After lesson 12 Students have learned science and First Nations perspectives on plants that are used for food around the world.
- In the activity 'Work On It' students study the photos and they examine each photo for the foods that people from elsewhere in the world eat. While students explore the many ways plants are used for food in this lesson, help them appreciate the manner in which the Church and the Gospels understand Christ's command to share.
- Use the story of the multiplication of fish to illustrate the need to share food with others as Christ shares himself with us each Sunday.
- As an extension project, encourage each child to bring in a can of plant derived food as an item to donate to the food bank. Before items are sent to the food bank, have students examine the labels. Have students list the primary items on their cans. Have students list whether the ingredients are man-made or plant or animal product or unknown. With unknown items teachers may wish to have students research whether these come from plants. However, it is best if students simply examine their labels for ingredients they understand.

- Take a tally of the ingredients that students have brought. Consider how many items have a plant based product as a primary ingredient.
- Stress the importance that food resources around the world must be protected and shared with those less fortunate. The American conference of Catholic Bishops published a pastoral reflection entitled, “Catholic Reflections on Food, Farmers, and Farmworkers”. It is a good reference for teachers to help understand the Church’s position on the ethics of food production around the world.

Lesson 7: How Can People Help Plants

Description: This lessons relates to lesson 14 “How can people affect plants” in PSS3 pg. 34 and lesson 15 “How can People Help Plants” pg. 36. The lesson also correlates to Unit 7 in ISWB3 and theme 20 ‘Crowned with God's glory ’ in the FA.

Required time: 1 hour

Instructional Procedure:

- After lessons 14 and 15 are completed, have students brainstorm a list of actions that affect plant life and help students derive some principles of stewardship by brainstorming reasons for protecting plant life. For example, a student might suggest cutting down trees, a stewardship principle might be cutting trees sustainably so we don’t deforest an entire region.
- Teachers would help students draw together similar examples to create stewardship principles or themes such as:
 - a) sustainability for future generations
 - b) respect for God’s creation
 - c) plants are a gift to be carefully used and managed
 - d) Plants are used for the good of all as food, clothing, resources, shelter etc.
 - e) Giving thanks to God for this gift.
- As students provide their ideas, help them to understand and to realize that God has a purpose for plants and all living things. Ask, “How do we respect the plant’s purpose? For example, if a plant’s purpose in a forest is to provide food for animals to live, how should we treat that plant? If grass on the lawn is home to insects, how should we treat that grass plant?”
- Help the children to understand the role they and other people have in the protection of God's creation.

Culminating Activity Extension: Design project

- In the design project in PSS3 pg. 38 students design and grow a vegetable garden. An extension to this activity, is a resource called ‘Planting and Growing Your Catholic Garden’ by Laura Nicholson. This is a fantastic resource on which students might model their gardens and merges faith with things that grow in the garden.
- In this modification the classroom will plant a garden together for the Lenten season. Each type of plant that is grown is associated with a bible story and a passage. Before each type of plant is grown teachers may read aloud the story and the biblical passage. See the pamphlet below for instructions and details.
- Resource: <http://www.chcweb.com/catalog/files/plantgarden.pdf>

Appendix A: Table of Correlation:

Faith Permeation lesson Documents	Pearson Saskatchewan Science 3	Outcome and Indicator	Catechism of the church	Gospel/ biblical references/ Church documents and encyclicals	Christian Ethics resources
Lesson 1: Plant Parts	lesson 2 ‘Plant Parts’ of PSS3 pg. 8 and 9	PL3.1 a, b,	2415	Matthew 6:28-29	N\A
Lesson 2: Exploring Plant parts	Get started pg. 10	PL3.1 a, b,	2415	John 15:5	N\A
Lesson 3: Basic Needs- how plants, humans and other living things depend on each other	lesson 5 “Basic Need” pg. 14 and 15.	PL3.2 g	2415		Theme 2 Topic 2 ‘Family Love is Open’ and Topic 5 ‘What is a Friend’ in the Fully Alive program
Lesson 4: Life Cycles	lesson 7 ‘life cycles’ on pg. 18	PL3.2 a,i,f	2415		3 ‘Beginning Life’ in FA
Lesson 5: Field Trips	lesson 10 ‘Take a Field Trip’ pg. 26.	PL3.2 a.e.l.m	2415	Matthew 6:28-29 John 15:5	
Lesson 6: Plants are Food for the World	lesson 12’ Plants are Food for the World” in PSS3 pg. 30.	PL3.2 b, i, m	2415, 2456	Catholic Reflections on Food, Farmers, and Farmworkers John 6:1-15	

Lesson 7: How Can People Help Plants	lesson 14 “How can people affect plants”pg. 34 lesson 15 “How can People Help Plants” pg. 36.	PL3.2 a,l,f,m	2415, 2456	Romans 8.22 and 21 Luke 15.11-32 Canadian Conference of Catholic Bishops- Our Relationship with the Environment: a need for conversion	Unit 7 in ISWB3 and theme 20 'Crowned with God's glory ' in the FA
Culminating activity: design project	PSS3 pg. 38	PL3.2 a, b PL3.1 i	2415	Various see: handout pdf “Planting and Growing Your Catholic Garden”	‘Planting and Growing Your Catholic Garden’

Appendix B: Catechetical Reference

- **2415** The seventh commandment enjoins respect for the integrity of creation. Animals, like plants and inanimate beings, are by nature destined for the common good of past, present, and future humanity.¹⁹⁵ Use of the mineral, vegetable, and animal resources of the universe cannot be divorced from respect for moral imperatives. Man's dominion over inanimate and other living beings granted by the Creator is not absolute; it is limited by concern for the quality of life of his neighbor, including generations to come; it requires a religious respect
- **2456** The dominion granted by the Creator over the mineral, vegetable, and animal resources of the universe cannot be separated from respect for moral obligations, including those toward generations to come. (CCC #2456)

Appendix C: Plant Scriptures and Prayers

Dear Father in heaven,
 Thank You for making trees.
 Thank You for making flowers.
 Thank You for plants.
 I love You.
 In Jesus’ name, Amen.

Source: www.wordaflame.org/Assets/Covers/PDF_files/TodTMsl.pdf

A Child’s Prayer for the Earth

Thank you for the sun,
 the sky,
 for all the things that like to fly,
 the shining rain that turns grass green,
 the earth we know -
 the world unseen -

for stars and night, and once again
the every-morning sun. Amen.

-Myra Cohn Livingston
from "On the Farm - Poems Selected by Lee Bennett

[http://schools.alcidsb.on.ca/environmentaled/Environmental%20Prayers/Prayers%20for%20Creat
ion%20An%20EcoSchools%20Resource.pdf](http://schools.alcidsb.on.ca/environmentaled/Environmental%20Prayers/Prayers%20for%20Creat%20ion%20An%20EcoSchools%20Resource.pdf)

Science 3

Faith Permeation Essential Connections

Unit Theme: Structures and Materials

Provincial Curriculum Outcomes and Indicators Addressed:

Outcome: SM3.1 Investigate properties of materials and methods of joinery used in structures.

c. Compare the properties of materials used historically and currently throughout the world to construct structures such as houses, bridges, towers, and roads.

Outcome: SM3.2 Assess the function and characteristics of strong, stable, and balanced natural and human-built structures.

a. Analyze the purpose or function of various natural and human- built structures.

b. Examine how some human-built structures are modeled on shapes and structures found in nature.

c. Assess how 2-D shapes (e.g., rectangle, triangle, circle, square, hexagon, and octagon) and 3-D objects (e.g., dome, arch, and cylinder) provide strength, stability, and balance to natural and human-built structures.

d. Compare the characteristics of solid (e.g., sand castle, mountain, and dam), frame (e.g., partition wall, hockey net, and spider web), and shell (e.g., igloo, bike helmet, balloon, and drink can) structures.

e. Classify natural and human-built structures as solid, frame, or shell structures.

f. Compare the characteristics of different types of shelter (e.g., tent, igloo, hut, boat, castle, tipi, yurt, and house) constructed by people throughout the world, past and present.

g. Examine the characteristics and significance of historical structures such as Stonehenge, the Parthenon, Petra, the Great Wall of China, Angkor Wat, Machu Picchu, the Taj Mahal, the Pyramids, and Easter Island moai.

Catholic Faith Focus for Learning:

In this unit students will learn Using science principles students will be able to describe the construction of ancient and modern churches. They will examine examples of Churches built around the world. Lastly students will be able to describe the cultural and spiritual significance of churches.

Catholic Faith Big Ideas (answers to the essential questions):

- Churches are humans made structures which are able to support great loads. Styles varied throughout the Church's history and materials often depended on the availability of construction materials in those areas unless dioceses were wealthy enough to import materials from abroad. Churches, typically, are framework structures made of wood, mortar, stone, brick or concrete. Churches are basically made up of several parts:
 - a) **Nave:** which is the main place of worship for the congregation
 - b) **Aisles:** along the sides of the nave
 - c) **Transepts:** an area which transects the nave on both sides near the front of the church. The transepts are the 'arms' of a cross as churches were typically designed in a cruciform pattern.
 - d) **chancel** which leads to the altar and a sanctuary. Choirs often sing from the chancel.
 - e) **altar :** on which mass is celebrated
 - f) **sanctuary:** which houses the tabernacle and the blessed sacrament.
- Students will not be expected to learn all the technical names for each part of the church but they are expected to know materials that were used in a church's construction, basic parts of a church and know the significance of a church isn't as a building but that the building itself is as a visible sign of a living community gathered together united in Christ in the worship of God.

1179 The worship "in Spirit and in truth"⁵³ of the New Covenant is not tied exclusively to any one place. The whole earth is sacred and entrusted to the children of men. What matters above all is that, when the faithful assemble in the same place, they are the "living stones," gathered to be "built into a spiritual house."⁵⁴ For the Body of the risen Christ is the spiritual temple from which the source of living water springs forth: incorporated into Christ by the Holy Spirit, "we are the temple of the living God."⁵⁵

1180 When the exercise of religious liberty is not thwarted,⁵⁶ Christians construct buildings for divine worship. These visible churches are not simply gathering places but signify and make visible the Church living in this place, the dwelling of God with men reconciled and united in Christ.

1181 A church, "a house of prayer in which the Eucharist is celebrated and reserved, where the faithful assemble, and where is worshipped the presence of the Son of God our Savior, offered for us on the sacrificial altar for the help and consolation of the faithful - this house ought to be in good taste and a worthy place for prayer and sacred ceremonial."⁵⁷ In this "house of God" the

truth and the harmony of the signs that make it up should show Christ to be present and active in this place.⁵⁸

1186 Finally, the church has an eschatological significance. To enter into the house of God, we must cross a *threshold*, which symbolizes passing from the world wounded by sin to the world of the new Life to which all men are called. The visible church is a symbol of the Father's house toward which the People of God is journeying and where the Father "will wipe every tear from their eyes."⁶⁵ Also for this reason, the Church is the house of all God's children, open and welcoming.

Catholic Faith Essential Skills:

- Students will be able to describe how shapes found in nature like squares, triangles and circles were adopted to build structures like churches. The students will examine a few examples of churches to see where these shapes might be found.
- Students will learn that the church is not simply a building but is a house of prayer where people gather in unity with Christ to participate in the sacraments in the worship of God. It is a community that works together to live out Catholic virtues, promote social justice and to listen to the word of God.

Catholic Faith Essential Questions:

- 1) How are churches built and what makes up a church?
- 2) In what ways are churches are they a structure?
- 3) What was their importance?

Teacher Note:

These faith permeation lessons aim to follow and to complement three key sources: Fully Alive (FA), Pearson Saskatchewan Science 3 (PSS3) and In the Spirit We Belong year 3 (ISWB 3). When these resources are referenced in following lessons and mini-lessons they will be abbreviated.

Lesson 1: What Shapes make a Church Structure Strong?

Required time: 1 hour

Instructional Procedure:

- This faith lesson should be taught after lesson 3 on pg. 52-53 in PSS3 is completed. Themes 5 and 6 in ISWB3.
- Provide students the handout entitled 'What Shapes make a Church Structure Strong?'.
• Read over the instructions with the students.
- You may wish to lead the students through the activity. In this activity students will determine which shapes from pg. 52 are found in the shape of church buildings. The activity is scaffolded with examples.

- Once the students are finished their activity and after they've examine the outside of the church, they will examine what really makes up a church.
- In that portion of the activity students will answer the question 'What is a Church?'

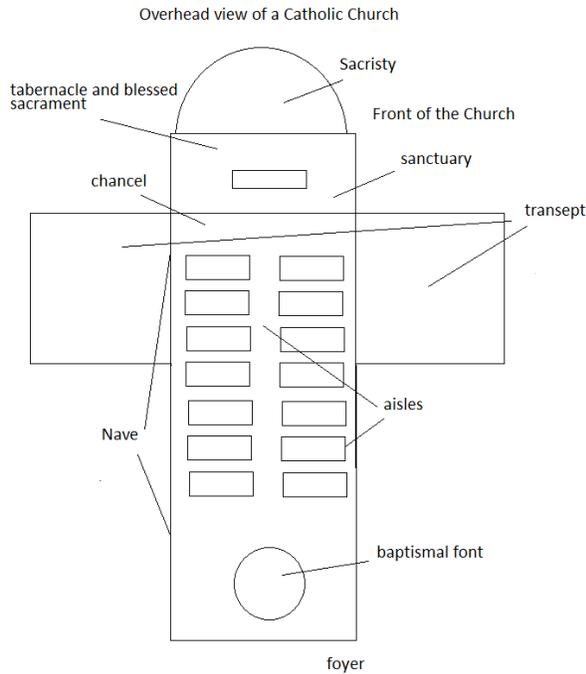
What really is a church?

Think about your church. Is a church just a building? What is it for? Who goes there? What do the people do inside? Why do the people gather?

- Through answering the questions above, students will derive a definition of what a church really is.
- By the end of the activity have students share their answers. Together generate a definition of what a church really is.
- Help student understand that the building made with shapes copied from nature, built with stone, rocks, mortar, and brick and wood is just an edifice. A church is a holy place of worship where people of faith come together united in Christ to worship God and to celebrate the word and the sacraments, namely Eucharist.
- This theme of a Church which is more than a building can be tied into themes that students have learned in ISWB theme 5 and 6. Teachers may wish to remind students and encourage them to reflect on:
 - a) *Church is where we gather and are invited to be in unity with Christ.* Gathering rite on pg. 22 and 23 of student book and section J) ISWB teacher guide pg. 89.
 - b) *Church is a place where we gather to hear the word of God.* Listening to the liturgy of the word (another reason the church gathers together) on pg. 24-25.
 - c) *Church is a place where we gather to share in Eucharist.* Eucharist: feasting at the table pg. 26-27 and 'We Celebrate the Eucharist' pg. 30 and 31.
 - d) *Church is a place to pray:* pg. 83 teacher manual section g) Lord, hear our prayer!
 - e) *Church is a community:* use scriptural passages appendix D.

Enrichment Activity:

- If time permits introduce ***Activity 2: Parts of a Church***. With this handout teachers will help students learn about the various parts of the church from a bird's eye perspective. Read over the activity with the students. As with the previous activity, ask students to determine shapes that are copied from nature in the layout of the church.



- Teachers may wish to introduce and explain the different parts of a church but it is not necessary that students know or memorize each part of the church.

Lesson 2: Types of Catholic Churches and Structures around the World

Required time: 40 min

Instructional Procedure:

- This faith permeation should be taught after lesson 9 ‘What Makes a Structure Last?’ in PSS3.
- ‘Activity 3: Types of Catholic Churches and Structures around the World’ functions much like the ‘work on it’ activity in PSS3 pg. 66.
- Have students choose a partner or divide students into teams. Please provide each student with a handout of activity3.
- Remind students that activity 3 is similar to ‘Work on It’. On a separate sheet of paper students will create a table like so...

Name of the structure	Materials used to make it	Permanent or temporary

- In their teams students will examine the pictures of various Catholic Churches and Structures and fill out their table.
- When students are done their table, have them assemble as a class.

- Have the students describe why they think these structures have stood the test of time or why they might not. Ask students to determine what these structures have in common and how they may be different.

Appendix A: Black Line Master

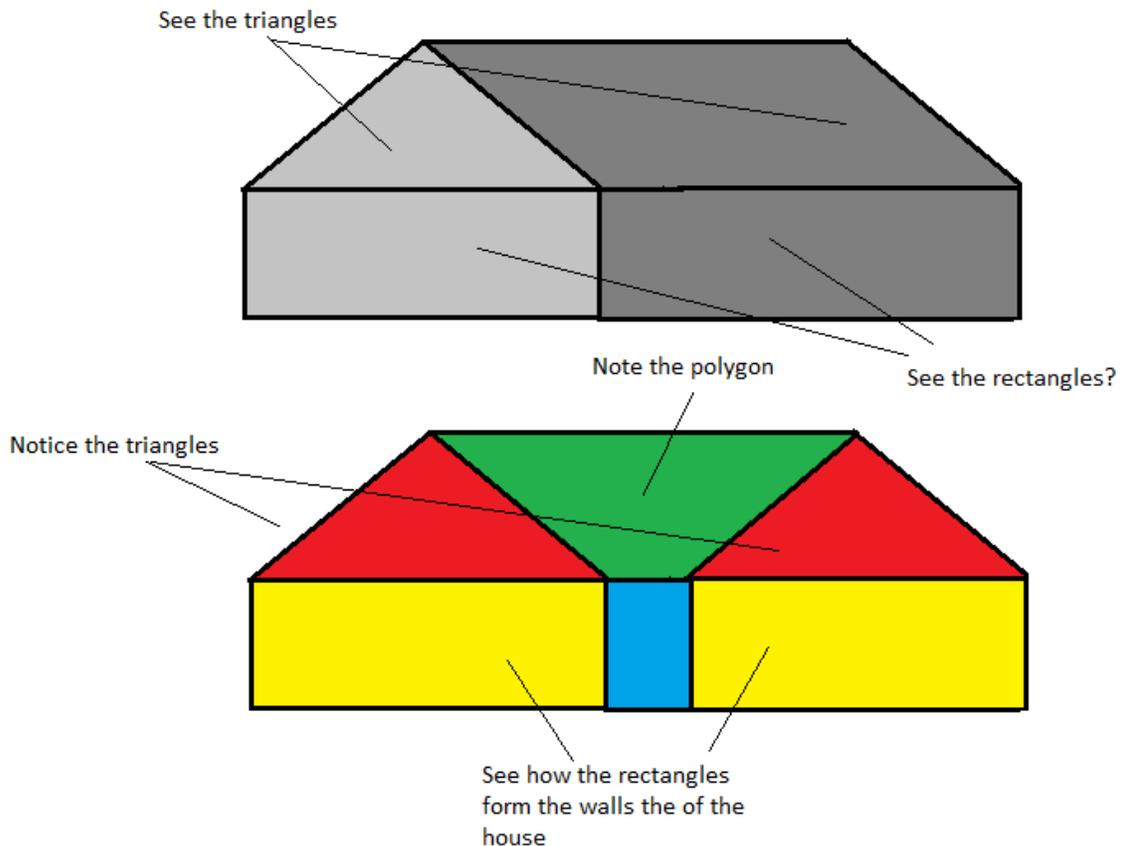
Activity 1: What Shapes make a Church Structure Strong?

In your textbook you learned people copied the shapes they saw in nature to make structures strong. Shapes like triangles and squares give buildings their strength. Use the shapes that you saw on pg. 52 to help you with the activity below.

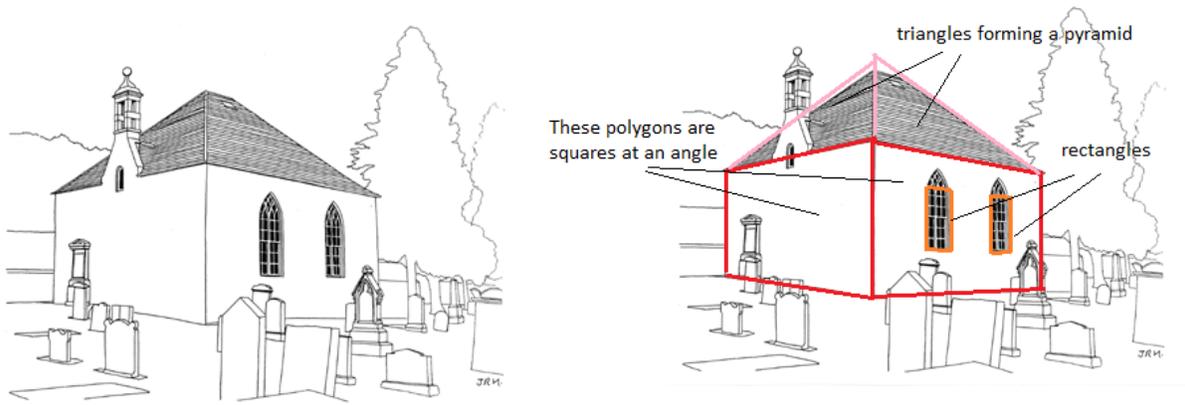
What makes a church strong?

On Sundays when you go to church, you sat in a pew with your parents. Have you ever wondered what makes the church strong? Do you see shapes in the building itself? Where did you see these shapes? Where these shapes in the corners, in the ceiling, outside and inside?

Have a look at the picture below. What shapes do you see? Think about your geometry lessons in math. Remember how you placed shapes inside a bigger polygon. Like this...



Now examine the church below. See the different shapes that make up the church?



Bourtie Parish Church

Source: <http://www.maintainyourchurch.org.uk/MaintenanceArticles/Topic1TypesofChurchBuilding/ArchitecturalStyles/tabid/93/Default.aspx>

With a pencil lightly draw in as many shapes as you can in the picture below. You try...



St Andrew's Roman Catholic Cathedral, Glasgow.

Source:

<http://www.maintainyourchurch.org.uk/MaintenanceArticles/Topic1TypesofChurchBuilding/ArchitecturalStyles/tabid/93/Default.aspx>

Now that you've learned what makes a church building strong, it is important to know what a church really is. Is a church just a building made from strong shapes copied from nature? Is it a building that is made with bricks, stones and mortar? Or is a church something completely different?

What really is a church?

Think about your church. Is a church just a building? What is it for? Who goes there? What do the people do inside? Why do the people gather?

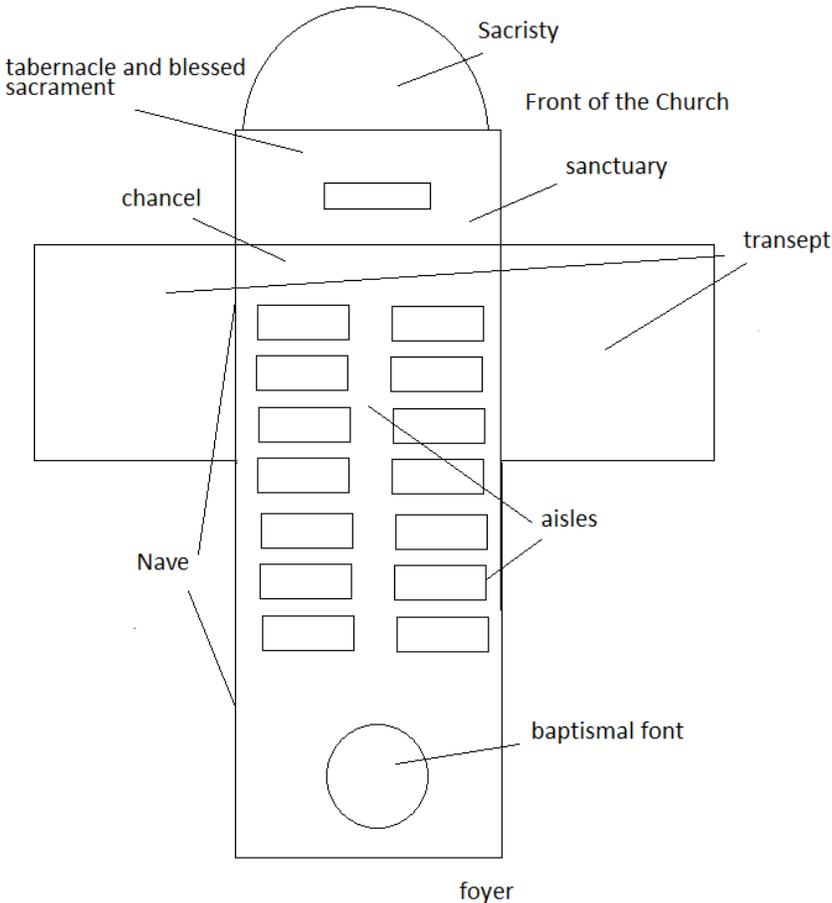
Write down the answers to the questions above in the space below:

A church isn't just a building it is.....

Activity 2: Parts of a Church

A church is made up of many rooms and many parts. Traditionally churches have been built in the shape of a cross. If you look at the diagram below you can see how the wings called the transepts form the arms of the cross. The main body of the church called the Nave is where the congregation, the community, sits. At the very back of the church is the baptismal font. In this font children and adults are baptised. The baptismal font is found at the back of the church, near the entrance to symbolize how through baptism we enter God's church. At the front the church, long ago, the chancel a place where the choir sang separated the sanctuary from the nave. Today most Roman Catholic churches no longer have a chancel or a communion rail which separated the priest from the congregation. In the sanctuary we find the altar where the priest says the mass. At the back of the sanctuary is the tabernacle, a large decorated box, which houses the blessed sacrament, blessed bread which has become the body of Jesus. The sacristy behind the sanctuary is a room where the priest gets ready for mass.

Overhead view of a Catholic Church



Activity 3: Types of Catholic Churches and Structures around the World

In lesson 9 ‘What Makes a Structure Last?’ you learned about different examples of buildings that are found around the world. Both the Taj Mahal and the Angkor Wat are very important places of worship that belong to other cultures and their religions. In the Catholic faith we have examples of ancient structures too. Look at the Catholic churches and buildings below. Describe why you think these structures have stood the test of time or why they might not. What do they have in common? How are they different?

St. Peter’s Basilica



Photo

Source: Wolfgang Stuck from wikipedia commons

It is considered one of the most holy places for Catholics. St. Peter’s was built in 1506 in Rome in the Vatican and is the burial place for many popes.

This Catedral Metropolitana de Sao Paulo, is a Portuguese cathedral built in 1913. It took four decades to build. This church can hold 8000 people and is made of 800 tons of marble WOW!

Catedral Metropolitana de Sao Paulo



Photo Source: Morio from Wikipedia commons

Pisa Cathedral

Construction of the Pisa Cathedral in Pisa Italy was begun in 1064. Made of marble and



beautifully built, Pisa Cathedral holds the bones of many Saints, is the resting place of an emperor Henry the VII and even a pope, pope Gregory VIII.

Called Cristo Redentor in Portuguese, the Statue of Christ the Redeemer is 130 feet tall, longer than a football field. Made from soapstone and concrete, it weighs 630 tonnes. We It is consider a wonder of the modern world. Many thousands of tourists go to see it every year. Is this a type of structure?

Statue of Christ the Redeemer in Rio de Janeiro



Photo source: [Klaus with K](#) from Wikipedia commons

Appendix B: Table of Correlation

Faith Permeation lesson Documents	Pearson Saskatchewan Science 3	Outcome and Indicator	Catechism of the church	Gospel/ biblical references/ Church documents and encyclicals	Christian Ethics resources
<p>Lesson 1: What shapes make a Church Structure Strong?</p> <p>Enrichment Activity:</p> <p>Activity 2- Parts of a Church</p>	lesson 3 on pg. 52-53 in PSS3	SM3.2 a,b,c,d,e,f,	1179,1180 1181,1186	Acts 20:28 Romans 12:4-5 1 Corinthians 12:12-26 Matthew 18:20 1 Peter 2:9-10	Unit 2: The Holy Spirit Gathers and feed at Eucharist Theme 5 and 6 in 'In the Spirit We Belong'
<p>Lesson 2: Types of Catholic Churches and Structures around the World</p>	In lesson 9 'What Makes a Structure Last?' pg. 61-62	SM3.1 a	1179,1180 1181,1186	Acts 20:28 Romans 12:4-5 1 Corinthians 12:12-26 Matthew 18:20 1 Peter 2:9-10	Unit 2: The Holy Spirit Gathers and feed at Eucharist Theme 5 and 6 in 'In the Spirit We Belong'

Appendix C: Catechetical References

1179 The worship "in Spirit and in truth"⁵³ of the New Covenant is not tied exclusively to any one place. The whole earth is sacred and entrusted to the children of men. What matters above all is that, when the faithful assemble in the same place, they are the "living stones," gathered to be "built into a spiritual house."⁵⁴ For the Body of the risen Christ is the spiritual temple from which the source of living water springs forth: incorporated into Christ by the Holy Spirit, "we are the temple of the living God."⁵⁵

1180 When the exercise of religious liberty is not thwarted,⁵⁶ Christians construct buildings for divine worship. These visible churches are not simply gathering places but signify and make visible the Church living in this place, the dwelling of God with men reconciled and united in Christ.

1181 A church, "a house of prayer in which the Eucharist is celebrated and reserved, where the faithful assemble, and where is worshipped the presence of the Son of God our Savior, offered for us on the sacrificial altar for the help and consolation of the faithful - this house ought to be in good taste and a worthy place for prayer and sacred ceremonial."⁵⁷ In this "house of God" the truth and the harmony of the signs that make it up should show Christ to be present and active in this place.⁵⁸

1182 The *altar* of the New Covenant is the Lord's Cross,⁵⁹ from which the sacraments of the Paschal mystery flow. On the altar, which is the center of the church, the sacrifice of the Cross is

made present under sacramental signs. The altar is also the table of the Lord, to which the People of God are invited.⁶⁰ In certain Eastern liturgies, the altar is also the symbol of the tomb (Christ truly died and is truly risen).

1183 The *tabernacle* is to be situated "in churches in a most worthy place with the greatest honor."⁶¹ The dignity, placing, and security of the Eucharistic tabernacle should foster adoration before the Lord really present in the Blessed Sacrament of the altar.⁶²

The *sacred chrism (myron)*, used in anointings as the sacramental sign of the seal of the gift of the Holy Spirit, is traditionally reserved and venerated in a secure place in the sanctuary. The oil of catechumens and the oil of the sick may also be placed there.

1184 The *chair* of the bishop (*cathedra*) or that of the priest "should express his office of presiding over the assembly and of directing prayer."⁶³

The *lectern (ambo)*: "The dignity of the Word of God requires the church to have a suitable place for announcing his message so that the attention of the people may be easily directed to that place during the liturgy of the Word."⁶⁴

1185 The gathering of the People of God begins with Baptism; a church must have a place for the celebration of *Baptism* (baptistry) and for fostering remembrance of the baptismal promises (holy water font).

The renewal of the baptismal life requires *penance*. A church, then, must lend itself to the expression of repentance and the reception of forgiveness, which requires an appropriate place to receive penitents.

A church must also be a space that invites us to the recollection and silent prayer that extend and internalize the great prayer of the Eucharist.

1186 Finally, the church has an eschatological significance. To enter into the house of God, we must cross a *threshold*, which symbolizes passing from the world wounded by sin to the world of the new Life to which all men are called. The visible church is a symbol of the Father's house toward which the People of God is journeying and where the Father "will wipe every tear from their eyes."⁶⁵ Also for this reason, the Church is the house of all God's children, open and welcoming.

Appendix D:

Matthew 18:20

For where two or three are gathered in my name, I am there among them.'

Acts 20:28

Keep watch over yourselves and over all the flock, of which the Holy Spirit has made you overseers, to shepherd the church of God that he obtained with the blood of his own Son.

Romans 12:4-5

For as in one body we have many members, and not all the members have the same function, so we, who are many, are one body in Christ, and individually we are members one of another.

1 Corinthians 12:12-26

For just as the body is one and has many members, and all the members of the body, though many, are one body, so it is with Christ. For in the one Spirit we were all baptized into one body—Jews or Greeks, slaves or free—and we were all made to drink of one Spirit. Indeed, the body does not consist of one member but of many. If the foot were to say, ‘Because I am not a hand, I do not belong to the body’, that would not make it any less a part of the body. And if the ear were to say, ‘Because I am not an eye, I do not belong to the body’, that would not make it any less a part of the body. If the whole body were an eye, where would the hearing be? If the whole body were hearing, where would the sense of smell be? But as it is, God arranged the members in the body, each one of them, as he chose. If all were a single member, where would the body be? As it is, there are many members, yet one body. The eye cannot say to the hand, ‘I have no need of you’, nor again the head to the feet, ‘I have no need of you.’ On the contrary, the members of the body that seem to be weaker are indispensable, and those members of the body that we think less honourable we clothe with greater honour, and our less respectable members are treated with greater respect; whereas our more respectable members do not need this. But God has so arranged the body, giving the greater honour to the inferior member, that there may be no dissension within the body, but the members may have the same care for one another. If one member suffers, all suffer together with it; if one member is honoured, all rejoice together with it.

1 Peter 2:9-10

But you are a chosen race, a royal priesthood, a holy nation, God’s own people, in order that you may proclaim the mighty acts of him who called you out of darkness into his marvellous light.

Once you were not a people,
but now you are God’s people;
once you had not received mercy,
but now you have received mercy.

Ephesians 2:19-22

19 Consequently, you are no longer foreigners and aliens, but fellow citizens with God's people and members of God's household, built on the foundation of the apostles and prophets, with Christ Jesus himself as the chief cornerstone. In him the whole building is joined together and rises to become a holy temple in the Lord. And in him you too are being built together to become a dwelling in which God lives by his Spirit.

Teacher resources:

<http://www.maintainyourchurch.org.uk/MaintenanceArticles/Topic1TypesofChurchBuilding/tabid/88/Default.aspx>

<http://www.fisheaters.com/churchbuilding.html>

Science 3 Faith Permeation Essential Connections

Unit Theme: Static Electricity and Magnetism

This unit does not contain any outcomes, indicators or course content that allows for faith permeation. However teachers are encouraged inspire awe in students regarding the wonders of magnetism and static electricity. Any forces in the physical universe as our faith teaches, is attributable to God and his creation. Therefore help students appreciate and wonder at God's handiwork.

John 1:3 All things came into being through him, and without him not one thing came into being.

Hebrews 11:3 By faith we understand that the worlds were prepared by the word of God, so that what is seen was made from things that are not visible.

Romans 1:20 Ever since the creation of the world his eternal power and divine nature, invisible though they are, have been understood and seen through the things he has made. So they are without excuse;

Science 3

Faith Permeation Essential Connections

Unit Theme: Exploring Soils

In this unit students are expected to observe, explore and understand the composition and composition of soils. Moreover students are expected appreciate and understand the cultural value of soil to different peoples. In this faith permeation unit students appreciate what soil meant to Jesus's people, how soil or earth is symbolic in our faith and how soil is a gift from God.

Provincial Curriculum Outcomes and Indicators Addressed:

Outcome: ES3.2 Analyze the interdependence between soil and living things, including the importance of soil for individuals, society, and all components of the environment.

- a. Suggest ways in which individuals and communities value and use soil, including the importance of Mother Earth for First Nations and Métis peoples.
- b. Examine the interdependence between animals and soils (e.g., insects and grubs live in soil, soil provides shelter for some animals, and earthworms aerate soil).
- c. Examine the interdependence between plants and soils (e.g., soils provide nutrients for plant growth, plant leaves die and fall onto the ground, and plant roots spread throughout soil).

Catholic Faith Focus for Learning:

In this unit students will learn about the impact that soil had on ancient Hebrews and how the importance of soil impacted their culture which in turn influenced our Catholic culture.

Catholic Faith Big Ideas (answers to the essential questions):

- The significance of soil to the Israelites cannot be overstated. Food derived from soils sustained the population. Jewish laws regarding land use and agriculture are found in the Pentateuch. These deal with agricultural laws such as when to plant and harvest, crop rotation, and seven year allowing of soil to regenerate through fallowing of fields. Rich soils provided hardy yields, a tenth of these were offered to God. Soil even informs Christ's parables in which He likens faith to seeds that root in fertile soils.
- Soil and 'earth' influenced biblical symbolism greatly. First soil signifies a place on which created life is placed. God separates water from dry land. Secondly, God breathed life into the first man after He fashioned him from earth. Next, soil in the Old Testament influence Christ compares our hearts to the fertile soils in which faith may take root. Consequently allusions about the harvest abound in which New and Old Testament writers liken faith to the fruit of that harvest.

- The Catholic Church also recognizes the importance of stewardship over natural resources of which soil is one:

The dominion granted by the Creator over the mineral, vegetable, and animal resources of the universe cannot be separated from respect for moral obligations, including those toward generations to come. (CCC #2456)

Catholic Faith Essential Skills:

- Students will describe the significance of soil to Jesus’ people.
- Students will be able to explain and give examples from the bible and from history where soil’s significance shapes our faith and its symbolic representation in the bible.

Catholic Faith Essential Questions:

- 1) What was the significance of soil to Jesus’ people?
- 2) How does symbolism of soil influence our faith

Teacher Note:

These faith permeation lessons aim to follow and to complement three key sources: Fully Alive (FA), Pearson Saskatchewan Science 3 (PSS3) and In the Spirit We Belong year 3 (ISWB 3). When these resources are referenced in following lessons and mini-lessons they will be abbreviated.

Lesson 1: How Was Soil Important to People of Jesus’ Time?

Description: This lesson ties in with lesson 3 in PSS3. In this lesson students will learn about how soil is important to First Nations and will have a chance to compare that worldview to a Catholic one. After making comparison students will evaluate where our beliefs about soil come from and understand the importance of soil from a faith perspective.

Required time: 1 hour

Instructional Procedure:

- Prior to this lesson prepare some poster boards or chart paper with the following title and list:

First Nations belief about soil:

- A) Soil is a gift from Creator
- B) Earth is one of the four sacred parts
- C) First Nations and Metis people honour soil by giving something back. Tobacco is given when something is taken from Mother Earth.
- D) Soil is a part of Mother Earth.
- E) Everything has a spirit.

F) Spirit connects all living things.

- Relate what the students will learn in this lesson with the traditional First Nations teachings found on pg. 132 and 133 in PSS3. Help them connect these teachings to this lesson by asking a few key questions.
- Say, “During our nature walk you got a chance to see all the living things around you. As you’ve learned after our discussions in lesson 3 you learned that First Nations people believe everything made by Creator has a spirit. How is this belief similar to our Catholic belief?”
- Have them brainstorm ways that traditional beliefs about soil are similar to our Catholic belief. Jot these on the board.
- Have students examine the list that you’ve prepared and the items they have brainstormed. Have them draw a t-chart on loose sheets of paper. Have them write down the list you’ve created in the left hand margin. Then in the right hand column have students write down ideas they’ve brainstormed.
- When students are done, convene them for a discussion. Add to the list if there are any outstanding or different answers.
- Pose the question, “Our Catholic belief about soil comes from somewhere. From where did it come?” Invite some answers.
- Introduce activity 1 by stating something like this: “Our beliefs come from Jesus’ teachings, his life, his religion Judaism, from belief and from our traditions. In the next activity you will how they ancient people of Jesus’ time understand soil. ”
- Prepare in advance copies of Activity 1. Distribute the activity.
- Read through the activity aloud or students may read with a partner. Have students share their ideas with people in the classroom. Have them add new ideas as they visit with other groups.
- As a final activity have the students create a poster with pictures about how soil and plants were important to people in Jesus’ time.

Lesson 2: Foods that grew in Ancient Middle Eastern Soil

Description: This lesson is an extension of the previous lesson. In this lesson students will appreciate soil’s historical value for ancient people and the plants that grew in ancient soil. This lesson is strongly correlated to Unit 2: The Holy Spirit Gathers and feed at Eucharist Theme 5 and 6 in ‘In the Spirit We Belong’.

Required time: 1 hour

Instructional Procedure:

- You will need these materials prior to the class:

Leeks, onions, wheat or flour, pomegranates, dates, figs, olives, and grapes.

- Share with the students items that you've brought. Pose the question, "What do these things have in common?"
- Invite answers from the students.
- Let them ponder the answer until the end of the class. The answer: They all grew in the Middle Eastern soils where Jesus's people lived.
- Tell the students that they will learn the answer by the end of the activity.
- Before beginning activity 2 teachers may wish to refer students to lesson 12' Plants are Food for the World" in PSS3 pg. 30 and 'Plant Parts' lesson 2 pg. 8 in PSS3. Lesson 2 might be a good reference for the student for activity 2.
- Distribute a copy of a bible for each student and a handout of activity2.
- Read over activity together as a class and then assign students partners to do the scavenger hunt. Prior teaching to use a bible might be needed. If bibles aren't available use an online bible. Ensure that you use NRSV as this is the Church's official version.
- Have students look up each passage in the bible and read the passage.
- Have them identify the food, herb, spice, fruit, vegetable, nut or grain that is found in that passage.
- If any passage indicates the plant's use have students write that down too. Reconvene and gather the students to begin section 2 of the activity.
- Read the part 2 **"What other foods were grown?"**
- Have students examine the list of plants that were mentioned in the bible and beside each one put a check. Help students understand that these are all foods that were grown or gotten by trade in the ancient Middle East.

- Then have the students look at the list on the handout and put a check mark beside the foods they eat or are familiar with.

- As a class discuss this question: Which foods do you eat or does your mom use at home in her kitchen? Invite answers from the class.
- Have students classify or group the foods in the list above as vegetable, nuts, fruit, grain, spice\herb. They may do this portion as partners or individually.
- When they are done have them compare their answer with others in the class.
- Finally, have the students read section 3 'Soul Food: Two Very Important Foods'
- Reconvene and discuss what they have read. If time permits have student write a reflection about the interconnectedness that we have with soil. They may raise examples like soil contains the same elements such calcium and phosphorus that we have in our bodies. In fact living particles in soil are composed carbon of which we are composed. They may suggest that soil was so important and that ancient people knew believed so

much in its importance that soil (or earth's) role was written in our creation story. Certainly soil is necessary for plant growth and development that allowed societies to prosper and thrive. From a faith perspective, soil allows for two plants from which bread and wine are made. Their importance cannot be understated in the mass. (Teachers may wish to make references to content that students have learned in Unit 2: The Holy Spirit Gathers and feed at Eucharist Theme 5 and 6 in 'In the Spirit We Belong'.)

Lesson 3: How Do We Protect Our Soil?

Description: This lesson is a brief lesson designed to help students reinforce the idea of Catholic Stewardship. The lesson will help students realize that our idea of stewardship is a bit different a scientific view of stewardship in that like First Nations, we believe that resources, such as soil, gifts from God for which we are thankful.

Required time: 30 hour

Instructional Procedure:

- Teach this lesson as an extension of lesson 14 in PSS3 pg. 154.
- One way to introduce this lesson is to invite your school caretaker to come in and to talk about his or her role. If your caretaker describes himself or herself as a 'caretaker' and not a 'janitor' have them elaborate on that distinction.
- Introduce the lesson by asking students about your guest.
- Ask, "Why did we have our caretaker come today?" Invite answers and puzzled looks.
- State, "Today we're going to learn about ways we can be good caretakers of soil."
- Provide each student a handout.
- In teams or in pairs have students read through the handout.
- Reconvene the students after 15 minutes to draw up a definition of stewardship or review the definition of stewardship that you created from unit 1:Plants.
- Then have students create a prayer in thanksgiving for the gift of soil.
- Have students share and maybe illustrate a drawing that will go along with the prayer.
- At the end of the lesson, gather together the following items: Seed, soil, and rain water. Conclude the class with a Prayer of Blessing. With the students complete the Prayer of blessing. After each short prayer lift up the item mentioned in the prayer. Teachers may wish to include the Prayer of Blessing in their Christian Ethics period if they run out of time. See Appendix C for the Prayer of Blessing in the unit.

Appendix A: Black Line Master

Activity 1: How Was Soil Important to People of Jesus' Time?

Most ancient people have very important stories about earth or soil that help explain how they came to be. In some versions stories told by the First Nations people in Saskatchewan, Wisakijak created land by blowing on a ball of soil found by a small mouse that swam to the bottom watery world. In our Catholic story soil (or earth) played a really important role too.

Genesis 2:4-8

⁴ These are the generations of the heavens and the earth when they were created. In the day that the LORD God made the earth and the heavens, ⁵ when no plant of the field was yet in the earth and no herb of the field had yet sprung up--for the LORD God had not caused it to rain upon the earth, and there was no one to till the ground; ⁶ but a stream would rise from the earth, and water the whole face of the ground-- ⁷ then the LORD God formed man from the dust of the ground, and breathed into his nostrils the breath of life; and the man became a living being.

According to Genesis from what was man made? God made the first people from earth. We understand this story to be allegorical or symbolic. Scientists believe that people evolved on the earth and were not made exactly the way the Bible tells it. But there is a bit of truth to it. Minerals like calcium and phosphorus that can be found in soil also make up the bones and teeth of people. In this way we are related to soil. The ancient people knew that. They knew how our bodies after they decomposed had nothing left but dust and particles from our bones.

Jesus' people knew how important soil is. They knew that without soil and the plants that lived in it, starvation happened. Soil was important for agriculture. The Bible says that God was the first gardener. In fact He was the first gardener.

Genesis 2:8 says.. *'And the LORD God planted a garden in Eden, in the east; and there he put the man whom he had formed.'*

The man and the woman God created were put in charge of the garden. God put people in charge of that garden. To care for it and for the future generations to come. This as you have learned is called Stewardship. People before and in Jesus' time believe that soil and the plants which grew in them were so important they made up rules and laws about how to farm, how to care for it, how to share the soil, how to grow plants, which plants to grow and when. Plants and soil are so important they mentioned very often in the Bible. In fact the word 'soil' is mentioned 44 times and 'plant' is used 130 times.

Why do you think gardens and planted fields were so important that it was mentioned so often? What uses did people in Jesus' time have for soil?

Communicate:

1. Share your ideas with people in your classroom.
2. Add new ideas to your list.
3. Then with a friend create a poster with pictures about how soil and plants were important to people in Jesus' time.

Activity 2: Foods that grew in Ancient Middle Eastern Soil

In activity 1 you learned how important soil is for many cultures. Soil's importance was so great it was written into many creation stories. It's most immediate important is its ability to help plants grow. Soil for growing was so strong that ancient people warred over land to grow crops.

The types of food that we eat depend on how well they grow in soil. What types of foods do you suppose grew in the soil in the land of Jesus' people, the Hebrews? In the following scavenger hunt you will find out. Look up each passage in the bible and read through the passage. Identify the plant, herb, spice, fruit, vegetable, nut or grain that is found in that passage. If the passage says what the plant is used for, then write that down too.

Numbers 11:7_____

Exodus 30:23_____

Numbers 11:5_____

Song of Solomon 2:5_____

Nehemiah 13:15_____

Deuteronomy 8:8_____

When you are done check your answer.

What other foods were grown?

The kinds of plants that Jesus' people used grew, ate or got from trading with other people were numerous.

Look at the list below. These are all foods that were grown or gotten by trade in the ancient Middle East. Are there plants here that we eat? Put a check mark beside the ones you eat. Note: do not look these passages up in the bible.

Anise (Matthew 23:23)

Cumin (Isaiah 28:25; Matthew 23:23)

Dill (Matthew 23:23)

Cucumbers (Numbers 11:5)
Mint (Matthew 23:23; Luke 11:42)
Mustard (Matthew 13:31)
Rue (Luke 11:42)
Almonds (Genesis 43:11; Numbers 17:8)
Dates (2 Samuel 6:19; 1 Chronicles 16:3)
Grapes (Leviticus 19:10; Deuteronomy 23:24)
Melons (Numbers 11:5; Isaiah 1:8)
Olives (Isaiah 17:6; Micah 6:15)
Pistachio Nuts (Genesis 43:11)
Pomegranates (Numbers 20:5; Deuteronomy 8:8)
Raisins (Numbers 6:3; 2 Samuel 6:19)
Sycamore Fruit (Psalm 78:47; Amos 7:14)
Beans (2 Samuel 17:28; Ezekiel 4:9)
Gourds (2 Kings 4:39)
Leeks (Numbers 11:5)
Lentils (Genesis 25:34; 2 Samuel 17:28; Ezekiel 4:9)
Onions (Numbers 11:5)
Corn (Matthew 12:1; KJV - refers to "grain" such as wheat or barley)
Millet (Ezekiel 4:9)
Spelt (Ezekiel 4:9), Exodus 12:20)
Wheat (Ezra 6:9; Deuteronomy 8:8)

As a class discuss this question: Which foods do you eat or does your mom use at home in her kitchen?

Then with a friend classify or group the foods in the list above as vegetable, nuts, fruit, grain, spice\herb.

When you've answered compare your classification to others in your class.

Soul Food: Two Very Important Foods

Two very important foods are mentioned in the bible. The first is wheat. Wheat is a grain that feeds nearly everyone in the world. After corn and rice, it is the third most cultivated grain. Humans grow about 600 million tons of it every year. Wheat was first taken from the wild and grown for food nearly 12000 years ago in an area of rich soil lands around the Nile River called the 'Fertile Crescent'. The Fertile Crescent was made up of ancient countries like Mesopotamia (which is today Iraq), Assyria (modern Iran and Syria) and Phoenicia (modern Israel, Lebanon, Greece and Northern Egypt). Jesus people would have learned to grow and raise this crop. That crop was ground up and made into bread.



The second very important plant mentioned in the bible is the grape. It is a fruit that when fermented, produces wine. Yeast, a fungus, is used to make the wine. Over 6000 years ago, grapes were first used and picked from the wild by ancient People in the Near East, where Middle Eastern countries like Israel are today. Grapes were eventually taken from the wild and planted.

In the bible both wheat and grapes are mentioned many times but for us, as Catholics, the most significant time when they are mentioned together as bread and wine happens at Jesus' last Passover meal. Passover is a celebration that Jewish people celebrated then and today. They remember when Moses took them out of slavery but for Jesus' disciples and for all Christians at the last supper Jesus gave us special gift.

The gospel of Matthew says:

While they were eating, Jesus took a loaf of bread, and after blessing it he broke it, gave it to the disciples, and said, 'Take, eat; this is my body.' Then he took a cup, and after giving thanks he gave it to them, saying, 'Drink from it, all of you; for this is my blood of the covenant, which is

poured out for many for the forgiveness of sins. I tell you, I will never again drink of this fruit of the vine until that day when I drink it new with you in my Father's kingdom.' (Matt. 26:26-30)

This act and this gift are called the Institution of the Last Supper. We call it communion and it is a sacrament, a visible sign of God's grace. Here we believe that bread made from wheat and the wine made from grapes which feeds our bodies become the actual body of Christ. It doesn't look, taste or feels different but the essence of it, the part that we can't see, is changed into the body of Jesus. That food which feeds our bodies becomes food for our Soul. This is why at mass, consecration when bread and wine become the body and blood of Christ, is the holiest moment and we share that holy moment in communion when we consume the bread and wine.

Black Line Master

Answer Key for Activity 2: Foods that grew in Ancient Middle Eastern Soil

In activity 1 you learned how important soil is for many cultures. Soil's importance was so great it was written into many creation stories. It's most immediate important is its ability to help plants grow. Soil for growing was so strong that ancient people warred over land to grow crops.

The types of food that we eat depend on how well they grow in soil. What types of foods do you suppose grew in the soil in the land of Jesus' people, the Hebrews? In the following scavenger hunt you will find out. Look up each passage in the bible and read through the passage. Identify the plant, herb, spice, fruit, vegetable, nut or grain that is found in that passage. If the passage says what the plant is used for, then write that down too.

Numbers 11:7 _____ Answer: Coriander

Exodus 30:23 _____ Answer: Cinnamon

Numbers 11:5 _____ Answer: Garlic

Song of Solomon 2:5 _____ Answer: Apples

Nehemiah 13:15 _____ Answer: Figs

Deuteronomy 8:8 _____ Answer: Barley

When you are done check your answer.

What other foods were grown?

The kinds of plants that Jesus' people used grew, ate or got from trading with other people were numerous.

Look at the list below. These are all foods that were grown or gotten by trade in the ancient Middle East. Are there plants here that we eat? Put a check mark beside the ones you eat.

Anise (Matthew 23:23) answer: spice\herb

Cumin (Isaiah 28:25; Matthew 23:23) answer: spice\herb

Dill (Matthew 23:23) answer: spice\herb

Cucumbers (Numbers 11:5) answer: technically a gourd. It could be classified as a fruit because the part we eat contains seed

Mint (Matthew 23:23; Luke 11:42) answer: spice\herb

Mustard (Matthew 13:31) Rue (Luke 11:42) answer: spice\herb

Almonds (Genesis 43:11; Numbers 17:8) answer: nut or seed

Dates (2 Samuel 6:19; 1 Chronicles 16:3) answer: fruit

Grapes (Leviticus 19:10; Deuteronomy 23:24) answer: fruit

Melons (Numbers 11:5; Isaiah 1:8) answer: fruit or gourds

Olives (Isaiah 17:6; Micah 6:15) answer: scientifically classified as a fruit but commonly called a vegetable. It is worth having a discussion with students.

Pistachio Nuts (Genesis 43:11): answer: nut or seed

Pomegranates (Numbers 20:5; Deuteronomy 8:8) answer: fruit

Raisins (Numbers 6:3; 2 Samuel 6:19) answer: fruit

Sycamore Fruit (Psalm 78:47; Amos 7:14) answer: fruit

Beans (2 Samuel 17:28; Ezekiel 4:9) answer: technically a legume but could be classed a seed but unfortunately most people think of it as a vegetable.

Gourds (2 Kings 4:39) answer: hard rind fruit

Leeks (Numbers 11:5) answer: vegetable

Lentils (Genesis 25:34; 2 Samuel 17:28; Ezekiel 4:9) answer: vegetable

Onions (Numbers 11:5) answer: vegetable technically a bulb or modified stem

Corn (Matthew 12:1; KJV - refers to "grain" such as wheat or barley) answer: grain but often called a vegetable

Millet (Ezekiel 4:9) answer: grain (botanically classed as a caryopses- a hard shelled fruit that grows on grass plants of which corn, wheat, millet, spelt and barley are)

Spelt (Ezekiel 4:9), Exodus 12:20) answer: grain

Wheat (Ezra 6:9; Deuteronomy 8:8) answer: grain

Black line Master

Activity 3: How Do We Protect our Soil?

If you just walk over it, soil could be nothing more than bits of dirt and living things. If nothing grew in soil then soil would be worth nothing to us. But when we think of how soil is the stuff in which all the food and plants for all the earth grow, then we can see how important soil is. If soil is poisoned, the plants in it die. When the plants die, so do the animals that need the plants to

live. Then meat-eaters who rely on those animals die too. How do we as Catholics need to think about protecting soil?

As you have learned the Church through God and his holy word has charged us to be the caretakers of earth. A caretaker, that's what a steward is.

What is a caretaker?

The most obvious example of a caretaker is the person who we sometimes ignore who looks after our schools. We often think of them as janitors, people who simply clean the toilets and pick up the garbage but our caretakers are more than that. They are people who care for the building *and the people in it*. Imagine what your school might be like without someone who cares. My caretaker greets everyone with a friendly hello, a kind word and a listening ear. My caretaker is someone whom I can pray with and does the servant's work to make sure everyone else can do their job. But my caretaker can't do it alone. I need to be responsible too.

What is a Catholic caretaker?

The Church teaches us that being a good steward or caretaker means that we understand that all that we have is a gift from God. How is soil a gift from God? How do we appreciate that gift? That gift from God must be shared. It doesn't mean that we take buckets of soil to give to our neighbors (you could) but it means that we should share the fruits of our soil, like the crops we grow, with others. But above all sharing isn't only for those people who live today; sharing the soil also means taking care of the land so that people in the future might use it too. It means that we take care not to pollute our soil with chemicals that might harm the things that live in it, the plants that grow in it and the people that depend on it.

How can we be good caretakers for the soil?

Read lesson 14 in Pearson Saskatchewan 3. In this lesson you'll learn about ways we can protect soil. After you've done the activities on pg. 154 and 155, ask yourself what is missing? This lesson teaches you how to be a good caretaker of soil but the lesson doesn't teach you to be a *Catholic* caretaker. Think about our definition of Catholic Stewardship. Now do you know what's missing?

If you answered prayer and thanksgiving then you're right. We can be good caretakers, no doubt, but to be Catholic caretakers we need to recognize that soil is a gift from God. We need to be thankful for that gift and we can thank him through prayer.

Compose a prayer of thanksgiving for soil:

Appendix B: Table of Correlation

Faith Permeation lesson Documents	Pearson Saskatchewan Science 3	Outcome and Indicator	Catechism of the church	Gospel/ biblical references/ Church documents and encyclicals	Christian Ethics resources
Lesson 1: How Was Soil Important to People of Jesus' Time?	“How do Indigenous People Understand Soil?” on pg. 132 and 133	ES3.2 a,	2456	Genesis 2:4-8	Unit 2: The Holy Spirit Gathers and feed at Eucharist Theme 5 and 6 in 'In the Spirit We Belong'
Lesson 2: Foods that grew in Ancient Middle Eastern Soil	Lesson 3 “How do Indigenous People Understand Soil?” on pg. 132 and 133 lesson 12' Plants are Food for the World” in PSS3 pg. 30. 'Plant Parts' lesson 2 pg. 8	ES3.2 a, b, c Plant Unit Indicators: PL3.2 b, i, m	2415, 2456	Matt. 26:26-30 Catholic Reflections on Food, Farmers, and Farmworkers John 6:1-15	Unit 2: The Holy Spirit Gathers and feed at Eucharist Theme 5 and 6 in 'In the Spirit We Belong'
Lesson 3: How Do We Protect our Soil?	lesson 14 in PSS3 pg. 154	ES3.2 b, c PL3.2 a,i,f,m	2415, 2456	Romans 8.22 and 21 Luke 15.11-32 Canadian Conference of Catholic Bishops- Our Relationship with the Environment: a need for conversion	Unit 7 in ISWB3 and theme 20 'Crowned with God's glory ' in the FA

Appendix B: Catechetical Reference

- **2415** The seventh commandment enjoins respect for the integrity of creation. Animals, like plants and inanimate beings, are by nature destined for the common good of past, present, and future humanity.¹⁹⁵ Use of the mineral, vegetable, and animal resources of the universe cannot be divorced from respect for moral imperatives. Man's dominion over inanimate and other living beings granted by the Creator is not absolute; it is limited by concern for the quality of life of his neighbor, including generations to come; it requires a religious respect
- **2456** The dominion granted by the Creator over the mineral, vegetable, and animal resources of the universe cannot be separated from respect for moral obligations, including those toward generations to come. (CCC #2456)

Appendix C: Prayer Of Blessing

Prayers of Blessing

(from *Sundays and Seasons*, copyright 2003, Augsburg Fortress, p. 195, from *Worship From the Ground Up: a Worship Resource for Town and Country Congregations*, Dubuque Iowa: Center for Theology and the Land)

Prayer for Seeds (hold seed aloft)

Creating God, you have given seed for the sower and bread to the people.
Nourish, protect, and bless the seeds which your people have sown in hope.
By your loving and bountiful giving, may they bring forth their fruit in due season,
through Jesus Christ our Lord. Amen.

Prayer for the Soil (hold soil aloft)

Giver of life, we give you thanks that in the richness of the soil, nature awakens your call to
spring
We praise you for the smell of freshly tilled earth, the beauty of a cleanly cut furrow, and a well-
plowed field.
We ask that you help us to be good stewards of the land.
In the name of the one who gives us new life, Jesus Christ our Lord, Amen,

Prayer for Water and Rain (hold water aloft)

Sustaining God, we receive the fruits of the earth from you. We give you thanks for the smell of
the earth after rain,
for its welcome cooling, and its necessary hydration for the land.
We ask that the rain come as often as it is needed
so that crops may flourish and the coming harvest be indeed bountiful. Amen.

Source: <http://www.webofcreation.org/Worship/services/rogation.htm>