

Salt

In History and the Bible



A Multidisciplinary Unit for Grades K-2

by Carolyn S. Kearbey, Ed.D.



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GOALS:

Content:

1. The students will learn about the properties of salt.
2. The students will learn about the use of natural resources, specifically salt, throughout history.
3. The students will learn how salt has been used in trading, buying, and selling in history.

Process:

1. The students will learn how to read a simple map to identify countries discussed in learning about the Salt Trade.
2. The students will learn how to use measurement.
3. The students will learn to follow one to three step directions in completing art projects.
4. The students will learn how to memorize Bible texts.

Affective:

1. The students will learn to appreciate the diversity of cultures beyond their own culture.
2. The students will learn to respect the interdependence between people and the environment.
3. The students will learn to discuss and analyze Bible texts they are memorizing.



PURPOSE OF THIS UNIT:

"Traditionally, the study of man has been based on the study of his tools and artifacts, ideas and religion. It has failed to take into account those items essential to man's survival. Such an item is Salt, neglected almost totally by both historians and archaeologists. The establishment of early settlements, the rise and decay of civilizations, demographic shifts of populations and the development of agriculture, were intimately related to the immediate availability of salt." (salt.org.il) The purpose of this unit to help students from the beginning of their education to become aware of how much man is dependent upon the resources of his environment and how God has helped to provide those resources throughout human history. The unit focuses on various cultures for which the Salt Trade guided their development and growth. It also looks at the properties of salt, why it is vital to humans, and how it has affected human history throughout the Bible and beyond. By the end of the unit, the students will gain an appreciation for the various cultures which evolved from the Salt Trade, a respect for the interdependence between the human race and the world around us, and an understanding for the importance of applying Bible verses to our daily lives.

In each lesson section there will be the following parts:

- A. Goals - What the lesson should accomplish for each day
- B. Information for the Teacher
 - 1. Bible Lessons - Several of the lessons include a Bible verse and the accompanying information from the Bible Commentary series.
 - 2. Salt Information - This will give background concerning salt and the salt trade information for the teacher to share with her/his students in the way they see best. It is obvious this cannot be simply read to the children and the teacher may wish to find creative ways to share the information given.
- C. Suggested Activities - These are creative ways the teacher could use to convey information and involve the children in the lesson. Use of these activities is naturally up to the teacher based on her/his teaching style and the makeup of her/his classroom as well as available supplies.



UNIT CONTENTS:

Lesson 1 - An Introduction to Salt

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LESSON 1: An Introduction to Salt.

Goals:

The students will be introduced to how important salt is in our lives.

The students will mark on a world map the countries discussed in this unit.

The students will use salt to make dough to begin creating a Noah's Ark picture.

Information for the Teacher:

Salt is absolutely necessary physiologically for human life...It is as basic for animal life as the air we breathe, the water we drink, and the proteins we eat. A salt deficiency is as critical as a water deficiency. Water and salt are essential to maintaining extra cellular and intracellular concentrations of salt to activate cells in all plant and animal life. The body may endure periods of lack of food, but without salt and water, living cells would quickly perish from dehydration.

<http://salt.org.il>

Salt is a biological necessity of human life. But we live our daily lives practically unaware of this basic biological fact. Most of our food already has salt added to it: check the labels on almost any prepared food in the house. But if you are in the habit of baking your own bread, or cooking your own porridge, it's immediately and disastrously obvious if you forget the salt.

In ancient times, salt (or the lack of it) could drastically affect the health of entire populations. Trade in salt was very important, and salt was valuable enough to be used as currency in some areas.

<http://teamwork.ucdavis.edu/~gel115/salt.html>

Suggested Activities:

1. Bring some salt into the classroom - let everyone take a little taste. Brainstorm what foods might not taste very good without salt in them (bread, for example). Explain how salt is very important for our bodies just like water and other foods. Explain how the salt is in most of the foods we eat, so we don't need to eat it straight. Explain that for the next few days we are going to look at how important salt has been in history and where salt comes from - both in the past and in the present. We are also going to do some activities with salt and learn some Bible verses about how important God views salt to be.

2. Pull out a world map. Have signs made for "CHINA", "ENGLAND", "ITALY", and "POLAND." Explain that these are the countries we are going to look at as we learn about where salt comes from. Help the children find the places on the world map and let them take turns taping the signs on the correct countries.



3. Put the children into groups of four or five. Help each group make some salt dough (1 cup flour, $\frac{1}{2}$ cup salt, and $\frac{1}{2}$ cup water for each group). The students must first combine the flour and salt, then add the water a little bit at a time, mixing as it is added, until the dough can be used to form a ball. Place the dough in a plastic bag.

Use the following directions to make a Noah's Ark picture. Plan to work a little bit each day over four days with each group contributing to the picture. If a group uses up their portion of dough, have ingredients standing by to make up more as needed. The dough will keep from day to day in the plastic bags in a cool, dark spot. The teacher or a class parent will need to do Steps 6 - 8 at home unless there is an acceptable oven at the school.

Students should not handle knives (Step 2), wood stain (Step 8) or varnish (Step 9).

Emphasize to students that while salt is something we eat, this dough is **NOT** for eating.

Noah's Ark

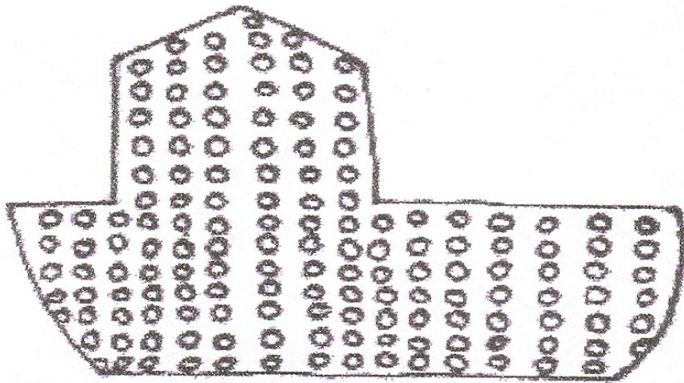
1. Start with a piece of pegboard cut to the shape of your project. Thread picture wire through the holes of the pegboard for later hanging.
2. Roll dough out over the pegboard. Use a knife to make lines indicating planks.
3. Always overlap the edges of the board with dough to allow for shrinkage and possible warping of the board.
4. Add details to the Ark from snakes of dough.
5. Noah and the animals are made freeform from pieces of dough pressed into the desired shape. (Bond pieces together with water.)
6. Bake at lower temperature than normal to retard warping (about **275°**). Allow for longer baking time, depending upon dough thickness.
7. Let the pieces cool gradually in the oven with the heat turned off (to avoid cracking.)
8. When cool, use wood stain for body of Ark and paint details.
9. Varnish both sides of the piece, including inside holes and around edges, to protect against moisture.

The following page includes illustrations to help in the design of the Ark.

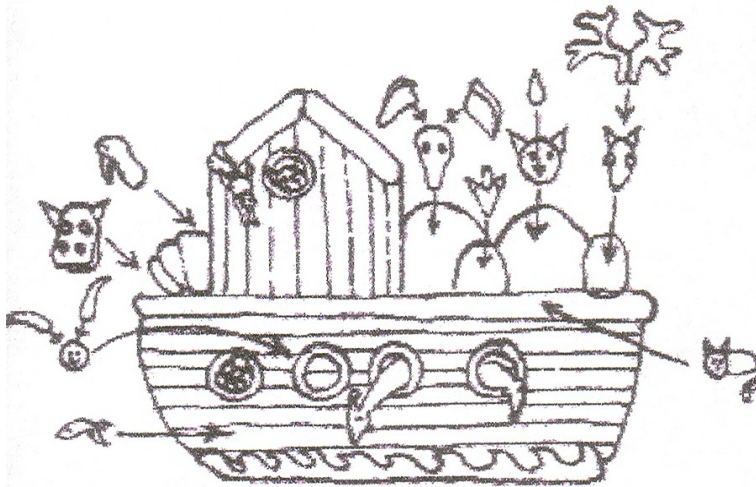
www.mortonsalt.com



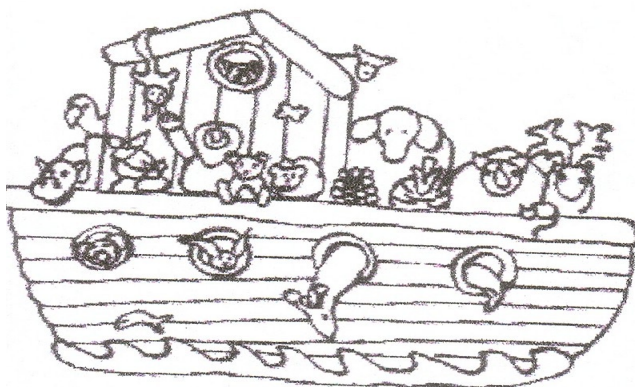
Step 1



Step 4:



Step 5:



LESSON 2: The Salt Trade in China

Goals:

The students will learn to identify China on a world map.

The students will draw a picture while listening to a story about the Salt Trade in China.

The students will begin growing their own salt crystals.

The students will continue working on the salt-dough Noah's Ark picture.

Important Information for the Teacher:

The following passages are from the SDA Bible Commentary concerning Matthew 5:13:

"You are the salt of the earth. But if the salt loses its saltiness, how can it be made salty again? It is no longer good for anything, except to be thrown out and trampled by men."

"In Palestine salt was gathered from marshes along the seashore or from inland lakes. The crude facilities for gathering it resulted in the presence of many impurities. In contact with dampness, or exposed to rain, the highly soluble salt itself would be washed away, leaving only the insipid impurities.

The underlying idea in comparing citizens of the kingdom to salt is in its quality as a preservative. Before the day of refrigeration and other modern modes of preserving food, salt and spices were largely used for preservation. In ancient Palestine, salt was used almost exclusively for this purpose and for seasoning. In a similar way the Christian, by becoming an agent in saving others through the diffusion of the gospel, exerts a preserving and purifying influence in the world. The disciples were to recognize the salvation of their fellow men as their primary responsibility. They were not to withdraw from society, because of persecution or for other reasons, but were to remain in close contact with their fellow men...

It would be as unthinkable for a Christian to lose his essential characteristic and still be a Christian as it would be for salt to lose its saltiness and still be considered and used as salt. If Christians are such in name only, their nominal citizenship in the kingdom of heaven becomes a farce. They are not Christians unless they reflect the character of Christ.

A nominal Christian cannot pass on to others that which he does not himself possess. A Christian from whose life the grace and power of Christ are lost is, as a Christian, "good for nothing." Even more, he becomes a positive detriment to the cause of the Kingdom by living a life that misrepresents the principles of the kingdom."



Additional information for the Teacher

The following information is from an article of Aug. 12, 2003 at www.china.org.cn/English. The entire article can be found by entering keywords "Salt Industry" at the website's search engine:

The Ba people built their Ba Kingdom in southwest China's Sichuan-Chongqing area. Though located in a barren mountainous area, the kingdom defeated their enemies in many wars and prospered, owing to its precious resource -- salt. At sites in the Three Gorges area on the Yangtse River formerly inhabited by the Ba people, archeologists found cultural relics used in primitive salt-making, providing proof to the assumption that a salt industry developed very early in this area.

What attracts archeologists most are the instruments for salt-making. The many pointed-bottom cups and rounded-bottom pots indicate that primitive salt industry developed very early in this area.

The pointed-bottom cups of red pottery are about a dozen centimeters high, with a mouth of about six to seven centimeters in diameter. Their walls are thin and the pottery is coarse. The rounded-bottom pots have thicker walls with veins on the outside. From the big quantity and coarse quality, archeologists conclude that these two kinds of wares were not used in daily life, but for salt production.

The Ganjinggou area, where Zhongba is located, abounds in brine. Actually, a large-scale salt industry existed in Ganjinggou until the early 20th century during the Republic period. On the opposite bank of Zhongba site, ancient brine wells can still be found. Before the Iron Age, potteries were the most available instruments to be used to boil brine and get salt.

Archeologists believe their findings show that Zhongba was one of the three ancient salt-making sites in this area, the other two being Wazhadi and Shaopengzui ... If their conclusion is confirmed, then the history of China's salt industry will be ascended (usage...what is meant here by ascended...attributed to? Descended from?) to the Shang Dynasty (c. 1600-c.1100 B.C.) and Western Zhou Dynasty (c.1100-771 B.C.) of 3000 years ago.

In *Records of Mountains and Seas*, the Wu Kingdom in the Three Gorges area is depicted as having been connected with the salt industry. According to the *Houhanshu* (*The History of the Later Han Dynasty*), the Ba Kingdom played a very important role in the Three Gorges area, and almost all of the kingdom's activities were related to the production of salt and fishing.

Most of the Three Gorges area is covered by high mountains and torrential rivers, not suitable for farming. But there was (usage of were correct but awkward) salt, a rare and expensive substance at the time, and fish. With salt, the fishermen could preserve the fish they caught, making it possible for them to store it as commodity



for exchange. Owing to these two vital resources, the Ba Kingdom thrived and became increasingly powerful ...

During the Spring and Autumn Period (770 B.C.-476 B.C.), the Ba was surrounded by the various states on all sides, the Chu to its east, the Shu to its west, and the Qin to its north. Compared with the other three, who fought frequent wars against one another, the Ba was a much weaker force. Finally, the eastern Three Gorges area, the salt producing center, was occupied by the Chu, which rendered the Ba to an even weaker position. Then in 361 B.C., the Qin State wiped out the Ba and Shu, and fought with Chu in the Three Gorges area. Scrambling for salt was obviously the main aim of the more than 300 years of continuous wars. It was the situation of salt production that decided the final fate of the Ba Kingdom.

In 1996, all of Daning's saltworks were closed - which indicated the total disappearance of salt industry in the Three Gorges area.

Suggested Activities:

1. Teach the class all or part of Matthew 5:13 (see under Teacher's Information). How much you ask them to learn depends upon your class and what you know they can handle. Using the information given above from the SDA Bible Commentary, discuss with the class why Christ compared us with salt and what the verse (or part-verse) means.

2. Have the children identify China on a world map. Emphasize how large the country is. Use the accompanying pictures to show how people in Ancient China looked (from www.chinapage.com/emperor.html). Emphasize to the children that this was how people in China dressed long ago, not today. Have the children give examples of other ways of dressing which existed long ago, but don't today. (Native Americans no longer wear feathers and Israelites no longer wear long robes, etc.). After studying the above information on the Three Gorges salt industry in ancient China, the teacher should convey the information in a story format to the children. Let the children use paper and crayons to copy one of the pictures. Keep the pictures to use for the fifth day art project.

3. You can grow a salt crystal by dissolving salt in a container of water until the water becomes saturated brine and will absorb no more salt. Use table salt to make the brine. **For growing salt crystals in the classroom, you will need a salt crystal large enough to tie with a cotton thread. It will become the seed from which a larger crystal can be grown. These larger crystals can often be found in natural food stores.** Tie one of the crystals of salt with cotton thread and suspend it in the brine. The crystal will attract salt and gradually grow over a period of time. The longer you leave it the larger it will become. You can do this as a whole class, small groups, or individual experiments, depending up on your class and available supplies. It may not finish at the end of this unit, but leave it for another week or two, then see what have grown. (www.saltinfo.com)

4. Continue working on the Noah's Ark picture.









LESSON 3: The Salt Trade in Italy

Goals:

The students will memorize and discuss Leviticus 2:13

The students will learn to identify Italy on a world map.

The students will draw a picture while listening to a story about the Salt Trade in Italy.

The students will continue working on the salt-dough Noah's Ark picture.

Information for the Teacher:

From the SDA Bible Commentary concerning Leviticus 2:13 *Season all your grain offerings with salt. Do not leave the salt of the covenant of your God out of your grain offerings; add salt to all your offerings.* "A covenant of salt is a perpetual covenant. In its ability to preserve, salt is the opposite of leaven and honey. Its symbolic meaning is plain: the purifying and preserving principles of holiness and truth must never be wanting in our covenant relations with God....God desires a pure people, a clean people, a holy people, a people whose sins are forgiven. The keeping power of God is theirs for the asking. Not only are they to become clean and holy, but they are to be kept so."

The great trading ports of the Mediterranean dealt in salt as well as spices and textiles. Not surprisingly, the greatest of them, Genoa and Venice, not only traded in salt but fought for supremacy over the trade. Salt can be made in almost any suitable seashore locality in the Mediterranean. So although it is ...difficult to control the production of salt. It is astonishing how effectively Genoa and especially Venice managed to take control of production as well as trading... Each used all its political and military strength to consolidate its local trade, and to encroach as far as possible on that of its rival. However, Venice was more organized politically, which translated into more ruthless and effective use of state power. And Venice made a conscious decision to concentrate on the salt trade, whereas to the Genoese it was just one of a set of potentially profitable cargoes. Where the two came into conflict over salt, the Venetians tended to win.

Venice managed to make a business out of control of the Adriatic salt trade. Venice owed some of its early wealth to the salt trade from salt works in its lagoon, and had a number of contracts with inland Italian cities in the 13th century to supply them with salt...Venetian traders delivering salt to the city were given bank credits...allowing them to buy goods quickly...

The Venetians set out to dominate the salt trade. In 932 they destroyed Cambricio [a city with a strong salt trade]. They burned the citadel, massacred the inhabitants, and carried off the survivors to Venice, where they had to swear an oath of loyalty to the Doge [ruler of Venice] before they were released. The Venetians began to construct salt works on their own lagoon... However, it



turned out that it was not as easy to build salt works in the relatively exposed, storm-prone lagoon of Venice as it had been at Comacchio, and it took a long time before salt production became really successful ... Meanwhile, the city of Cervia, south of Ravenna, filled the production vacuum left by the destruction of Comacchio. Cervia was in production at least by 965/975 AD.

Around 1180, it was clear that Cervia and Chioggia were rivals for salt production, under the protection of Ravenna and Venice respectively. The Archbishop of Ravenna and the Doge of Venice now began playing hardball. Venice declared it illegal to sell Chioggia salt to be sold or shipped without a Venetian certificate, and Ravenna did the same for Cervia. The salt market was now out of the hands of merchants and in the hands of the politicians. By 1234, war between Venice and Ravenna ended with a ban on any Ravenna (Cervia) salt being shipped northward, and Venetian galleys enforced the treaty.

Now the Venetians went one logical step further: for all practical purposes they gave up trying to be salt producers, and instead concentrated on being (monopoly) salt traders. Between 1250 and 1280, they came more and more to be the dominant buyers of salt, which they then shipped and sold. By the 1350s, no salt could move on a ship in the Adriatic unless it was a Venetian ship bound to or from Venice.

A golden rule of Venetian policy was that all trade goods under their control must pass through Venice. As late as 1590 they were making an 81% mark-up on salt sold inland, but that was not always the case. Sometimes Venice sold salt at less than normal rates if it would foster trade in higher-value goods that would yield more profit. ...

The Venetians had different methods for maintaining their trading monopoly. On the island of Pag, they would buy up all the salt that was not needed locally. It would then be shipped to Venice and sold (at very high prices) to customers. At Muggia and Capodistria, the Venetians were given a fraction (about 10%) of the salt produced (presumably as protection money), but the locals were allowed to sell the other 90% only as long as it was carried overland, effectively limiting its value and the sales area.

As late as 1578, the Venetians destroyed the salt works at Trieste, and in the following twenty years were making an 80% profit on salt sold inland on the Lombardy plain. But around 1600, paradoxically with the defeat of the Turks at sea, shipping in the Adriatic became too great for the Venetians to be able to maintain their monopoly by force. Their source of riches in the spice trade had been cut off as the trade routes to India now passed around Africa, and their shipping was declining.

www.teamwork.ucdavis.edu/~gel115/salt.html)



Suggested Activities:

1. Teach the class all or part of Leviticus 2:13 (see under Teacher's Information). How much you ask them to learn depends upon your class and what you know they can handle. Using the information given above from the SDA Bible Commentary, discuss with the class why God wanted salt as part of His offerings and what the verse (or part-verse) means.

2. Find Italy on the world map. Discuss with class how easy it is to recognize Italy by looking for a high-heeled boot.

3. Show the accompanying pictures to show how Ancient Venice looked (from www.museiciviviceneziiani.it). Emphasize to the children that this was how buildings in Italy were built long ago. While these buildings are still standing and are used as museums today, Venice is now a modern city. Also point out the canals (can be seen in some of the pictures) and how these were used for transportation in ancient times. After studying the above information on the Venetian salt industry in ancient Italy, the teacher should convey the information in a story format to the children. Focus on the greed of the Venetian merchants and politicians and how they lost in the end. Let the children use paper and crayons to copy one of the pictures. Keep the pictures to use for the 5th day art project.

4. Continue working on the Noah's Ark picture.

5. The teacher needs to begin preparing materials for the 5th day art project. For each student, peel off the backing from a piece of clear contact paper. With the sticky side up, cover thoroughly with salt. Gently shake off excess salt. Gently place the backing on top, then lightly stack the sheets (do not press down). Let stand at least 48 hours.



LESSON 4: The Salt Trade in England

Goals:

The students will memorize and discuss Numbers 18:19

The students will learn to identify England on a world map.

The students will draw a picture while listening to a story about the Salt Trade in England.

The students will complete work on the salt-dough Noah's Ark picture.

Important Information for the Teacher

The following passage is from the SDA Bible Commentary concerning Numbers 18:19.

"Whatever is set aside from the holy offerings the Israelites present to the Lord I give to you and your sons and daughters as your regular share. It is an everlasting covenant of salt before the Lord for both you and your offspring.

"An indissoluble covenant, one that never decays, a bond of sacred friendship. Salt, itself a preservative, is an appropriate symbol of that which is incorruptible. It is an emblem of a binding alliance, as when two men would eat bread and salt together. Salt was always added to the sacrifices made to the Lord."

At the time of the Roman Conquest, British salt making had been long established at numerous coastal sites and at the inland brine springs of Cheshire and Worcestershire. Salt was a vital commodity to the Roman army and this demand will have been met by establishing military salt works. Roman soldiers were partly paid in salt. It is said to be from this that we get the word soldier - 'sal dare', meaning to give salt. From the same source we get the word salary, 'salarium.'

At Middlewich the Romans established their saltworks on land by the River Croco between the military fort and the site of the existing Celtic salt making settlement. Our knowledge of Roman life in Mid-Cheshire has been greatly enhanced by two recent major archaeological digs on land scheduled for housing development. At both Middlewich in 2001 and at Nantwich in 2002 evidence was uncovered revealing that both towns had extensive early Roman industrial settlements with salt making and other trades. Both sites appear to have been abandoned at the end of the Roman period. There is no evidence of later medieval industrial activity and the land presumably returned to agricultural use soon after the Romans left.

Salt making continued in post Roman Cheshire...Coastal salting in England took what advantage it could of solar evaporation and tended to be seasonal. But the



final stage to give dry salt always involved evaporating the brine over a fire, at first in ceramic vessels and later in lead pans. Production methods remained unchanged for a thousand years after the Roman occupation. Salt boiling was bound by ritual and tradition. Throughout history and up to the industrial revolution, the prime reason for making salt was the preservation of food for the winter months. If not obtainable locally it would have to be obtained from afar by packhorse or boat [or, in desert lands, by camel caravan.] Salt was probably the first traded commodity.

Clearly the demand for salt will have varied with the size of the population. Between 1066 and the mid-fourteenth century, England's population roughly doubled and hence so did the demand for salt. 1348 brought the Black Death and this together with the other plagues of the mid-14th century almost halved the population, halving the domestic salt demand. Together with rising sea level, this was to lead to a decline of the salt export trade...By the Tudor and Stuart periods the population of England had grown to the high level preceding the Black Death.

Making salt required vast quantities of timber to heat the salt pans and evaporate the water from the brine. This resulted in extensive reduction of the Cheshire forests. Lancashire and Staffordshire coal started to arrive at the Cheshire wiches as a replacement fuel for the salt pans. The same pack-horse trains which brought the coal, took salt to growing markets in South Lancashire and the Potteries.

The destruction of Cheshire timber and the need to obtain fuel allowed Liverpool merchants a foothold in the highly conservative salt trade. They raised Northwich from a sleepy, dirty town, "full of smoak" riddled with restrictive practices, to a centre of British salt production.
(www.saltinfo.com)

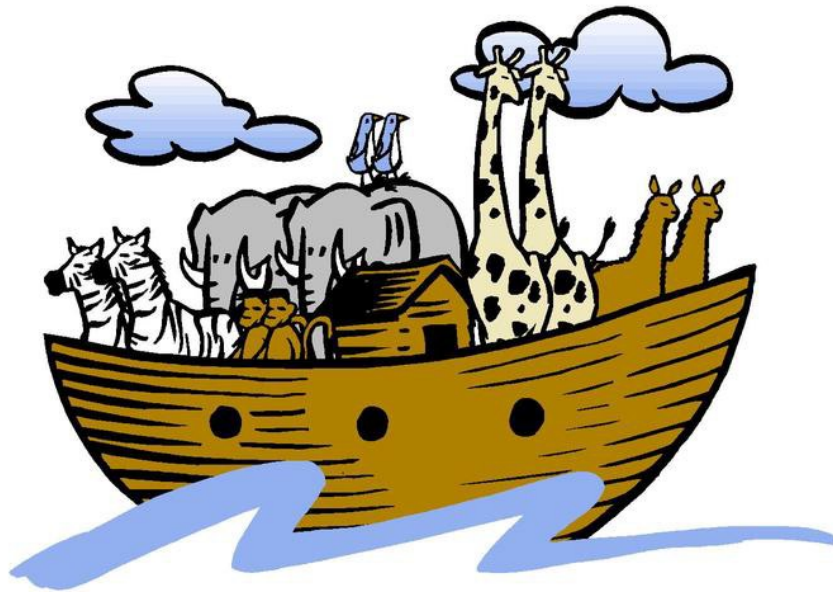
Suggested Activities:

1. Teach the class all or part of Numbers 18:19 (see under Teacher's Information). How much you ask them to learn depends upon your class and what you know they can handle. Using the information given above from the SDA Bible Commentary, discuss with the class what God meant by an "everlasting covenant of salt."
2. Find England on the world map. Discuss with class how easy it is to recognize England as a large island north of Europe.
3. Show the accompanying pictures to show how the castles of ancient England looked (from www.ecastles.co.uk). Emphasize to the children that this was how buildings in England were built long ago for protection. While these buildings are still standing and are used as museums today, England is a modern country with modern cities and buildings, also. Discuss how salt may have been used in the castles. Af-



ter studying the above information on the English salt industry, the teacher should convey the information in a story format to the children. Focus on how the Roman occupation helped encourage the salt industry and also how it depended upon a growing population for a market. Let the children use paper and crayons to copy one of the pictures. Keep the pictures to use for the fifth day art project.

4. Complete work on the Noah's Ark picture.











LESSON 5: The Salt Trade in Poland

Goals:

The students will memorize and discuss Mark 9:50

The students will learn to identify Poland on a world map.

The students will draw a picture while listening to a story about the Salt Trade in Poland.

The students will pick one of their drawings from the week and use it to make a salt painting.

Important Information for the Teacher:

*From the SDA Bible Commentary concerning Mark 9:50 **Salt is good, but if it loses its saltiness, how can you make it salty again? Have salt in yourselves, and be at peace with each other.** "If the disciples had the 'salt of the covenant' (Lev. 2:13) it would restrain the unfortunate tendencies that had led to the discussion of who is greatest in the Kingdom of Heaven ... A fitting climax to the discourse, an admonition to refrain from further argument on the subject, a warning against jealousy and the spirit of rivalry."*

The following is the description of a visit to a salt mine in Wieliczka, Poland, in 1850:

In company with a professor from St. Petersburg, we left Cracow in the morning ... The village of Wieliczka occupies a charming situation on the northern slope of a long, wood-crowned hill. The large storehouses for the salt, the government offices, and the residences of the superintendents, on a slight eminence near the foot, first strike the eye. After procuring a permit from the proper official, we presented ourselves at the office, over the mouth of the mine ... We were all enveloped in long, coarse blouses of white linen, and having bespoken a supply of Bengal lights, a door was opened, and we commenced descending into the bowels of the earth by an easy staircase, in a square shaft. Six boys, carrying flaming lamps were distributed among our party, and one of the superintendents assumed the office of conductor.

After descending 210 feet, we saw the first veins of rock salt, in a bed of clay and crumbled sandstones. Thirty feet more, and we were in a world of salt. Level galleries branched off from the foot of the staircase; overhead, ceiling of solid salt, under foot a floor of salt, and on either side dark gray walls of salt, sparkling here and there with minute crystals. Lights glimmered ahead, and on turning a corner we came upon a gang of workmen, some hacking away at the solid floor, others trundling wheelbarrows full of the precious cubes. Here was the chapel of St. Anthony, the oldest in the mines --- a Byzantine excavation, supported by columns with altar, crucifix, and life-size statues of saints, apparently in black marble, but all as salt as Lot's wife, as I discovered by putting my tongue to the nose of John the Baptist...



I cannot follow, step by step, our journey of two hours through the labyrinths of this wonderful mine. It is a bewildering maze of galleries, grand halls, staircases, and vaulted chambers, where one soon loses all sense of distance or direction, and drifts along blindly in the wake of his conductor. Everything was solid salt except where great piers of hewn logs had been built up to support some threatening roof, or vast chasm, left in quarrying, had been bridged across. As we descended to lower regions, the air became more dry and agreeable, and the saline wall more pure and brilliant. One hall, 108 feet in height, resembled a Greek theater, the traces of blocks taken out in regular layers representing the seats for the spectators...

A little farther we struck upon a lake four fathoms deep, upon which we embarked in a heavy square boat and entered a gloomy tunnel, over the entrance of which was inscribed (in salt letters), "Good luck to you!" ... Midway in the tunnel, the halls at either end were suddenly illuminated, and a crash, as of a hundred cannon, bellowing through the hollow vaults, shook the air and water in such wise that our boat had not ceased trembling when we landed in the farther hall... A tablet inscribed "Heartily welcome!" saluted us in landing. Finally, at the depth of 450 feet, our journey ceased, although we were but halfway to the bottom. The remainder is a wilderness of shafts, galleries, and smaller chambers, the extent of which we could only conjecture.

We then returned through scores of tortuous passages to some vaults where a lot of gnomes, naked to the hips, were busy with pick, mallet, and wedge, blocking out and separating the solid pavement. The process is quite primitive, scarcely differing from that of the ancient Egyptians in quarrying granite. The blocks are first marked out on the surface by a series of grooves. One side is then deepened to the required thickness, and wedges being inserted under the block, it is soon split off. It is then split transversely into pieces of one hundred-weight each, in which form it is ready for sale. Those intended for Russia are rounded on the edges and corners until they acquire the shape of large cocoons, for the convenience of transportation into the interior of the country.

The number of workmen employed in the mines is 1500, all of whom belong to the "upper crust"--- that is, they live on the outside of the world. They are divided into gangs, and relieve each other every six hours. Each gang quarries out, on an average, a little more than 1000 hundredweight of salt in that space of time, making the annual yield 1,500,000 hundredweight! ...

It requires a stretch of imagination to conceive the extent of this salt bed. As far as explored, its length is two and a half English miles, its breadth a little over half a mile, and its solid depth 690 feet! It commences about 200 feet below the surface, and is then uninterrupted to the bottom, where it rests on a bed of compact sandstone such as forms the peaks of the Carpathian Mountains ... Notwithstanding the immense amount already quarried -- and it will be better



understood when I state that the aggregate length of the shafts and galleries amounts to 420 miles -- it is estimated that, at the present rate of exploitation, the known supply cannot be exhausted under 300 years ...It is not known how this wonderful deposit --more precious than gold itself -- was originally discovered. We know that it was worked in the twelfth century, and perhaps much earlier ...

On our return we visited Francis Joseph's hall, a large salt ballroom, with well-executed statues of Vulcan and Neptune. Six large chandeliers, apparently of cut-glass, but really of salt, illuminate it on festive occasions, and hundreds of dancers perspire themselves into a pretty pickle. When we had reached the upper galleries, we decided to ascend to daylight by means of the windlass. The Prussian party went first, and the ladies were not a little alarmed at finding themselves seated in rope slings, only supported by a band under the arms. All five swung together in a heap; the ladies screamed and would have loosened themselves, but that moment the windlass began to move, and up they went, dangling, towards the little star of daylight, two hundred feet above. ... When our turn came, I found, in spite of myself, that such pastime was not calculated to steady my nerves ... my brain swam a little at finding my feet dangling over what seemed a bottomless abyss of darkness.

The arrival at the top was like a douche of lightning. It was just noon, and the hot, white, blinding day poured full upon us, stinging our eyes like needles, and almost taking away our breath. We were at once beset with a crowd of beggars and salt-venders. The latter proffered a multitude of small articles -- crosses, stars, images, books, cups, dishes, etc. -- cut from the native crystal, and not distinguishable from glass in appearance. I purchased a salt-cellar, which has the property of furnishing salt when it is empty. But it seemed to me that I should not need to use it for some days. I felt myself so thoroughly impregnated with salt that I conceived the idea of seasoning my soup by stirring it with my fingers, and half-expected that the fresh roast would turn to corned beef in my mouth.

From: Eva March Tappan, ed., *The World's Story: A History of the World in Story, Song and Art*, (Boston: Houghton Mifflin, 1914), Vol. VI: *Russia, Austria-Hungary, The Balkan States, and Turkey*, pp. 370-377.

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halsall@fordham.edu

Suggested Activities:

1. Teach the class Mark 9:50 (see under Teacher's Information). Using the information given above from the SDA Bible Commentary, discuss with the class what Jesus meant by an "have salt in yourselves." Why did he need to tell the disciples to "have peace with each other"? What does that mean to us today?

2. Find Poland on the world map. Discuss with class how hard it may be to find Poland in the middle of many other countries of Europe.

3. Show the accompanying pictures from the salt mines in Wieliczka, Poland (from www.kopalnia.pl/english/galeria.htm). Emphasize to the children that everything in these pictures, except the visitors and the wood supports, is made of salt. This mine is still in production today. After studying the above information on a visit to this mine in 1850, the teacher should convey the information in a story format to the children. Discuss how the salt may be mined today opposed to the description in 1850. Let the children use paper and crayons to copy one of the pictures. Keep the pictures to use for the final art project.

4. This activity could wait for another day, but should be completed within a couple days of Lesson 5. Have each student choose one of the pictures they drew for the unit. Take the salt-covered clear contact paper you prepared several days earlier. With salty side up, place salt paper over the child's picture. Use a paint brush and water colors to paint on surface of salt paper. Use light strokes when painting, rather than rubbing hard. Let dry, then remove the paper from under your design. To give design a softer look, spray with fine mist of water. Glue design to background paper of your choice, with either textured or smooth side up. (www.Morton salt.com)











REFERENCES:

All of the following are online websites used to put together this unit. All are available for further information or illustrations. The salt.org.il website includes several links to other sites containing information on salt.

www.china.org.cn/English/2003/Aug/72220.htm

www.chinapage.com/emperor.html

www.ecastles.co.uk

www.fordham.edu/halsall/mod/modsbook.html

www.kopalnia.pl/english/galeria.htm

www.mortonsalt.com

www.museiciviciveneziani.it

salt.org.il

www.saltinfo.com

teamwork.ucdavis.edu/~gel115/salt.html

Also used in this unit:

Holy Bible - New International Version. International Bible Society, Colorado Springs, CO: 1984.

Seventh-day Adventist Bible Commentary - Volume 1. Review and Herald Publishing Association, Washington, D.C.: 1980.

Seventh-day Adventist Bible Commentary - Volume 5. Review and Herald Publishing Association, Washington, D.C.: 1980.

