

Lesson 9
Read-Aloud Story: The Circle of Blessing

“Come back to me, my children, let us not part;” murmured the Sea to the Vapours, which rose from its surface, drawn upwards by the heat of the tropical sun. “Return to my bosom, and contribute your share to the preservation of my greatness and strength.”

“There is no lasting greatness, but in distributed good,” replied the Vapours; “behold, we carry your cooling influence to the heated air around. Let us alone, oh Sea! The work is good.”

“But carried on at my expense,” murmured the Sea. “Is the air your parent, and not I, that you are so careful of its interests and so neglectful of mine? Why are you thus ungrateful to me, from whom your very existence springs? O foolish children! By diminishing my power you are sapping the foundations of your own life. Your very being depends on mine.”

“Small and great, great and small, we all depend on each other,” sang the Vapours as they hovered in the air. “Mighty Ocean, give us of your abundance for those that need. It is but little that we ask.”

“Divided interests are the ruin of fools,” muttered the angry Sea.

“But extended ones the glory of the wise,” replied the Vapours, as they still continued to rise. “See, now, have we not done ourselves, what we would have you also do? Behold, we have left our salts in your bosom for those that need them.”

“And I have cast them as a useless burden to my lowest depths,” exclaimed the Sea, indignantly. “Have I not enough, already? Superfluous bounties deserve but little thanks, methinks.”

“Yet in those depths, perchance they may be as welcome as we to the air above,” persisted the Vapours.

“It is ever thus: and all will be made good at last. Small and great, great and small, we are dependent on each other evermore.”

“Begone, then,” moaned the Sea. “You, who are willing to sacrifice a certain good for an uncertain fancy, begone, and be yourselves the first victims of your folly. The breezes, that are now driving you forward across my surface, will rise to fury, and blow you into nothingness as you proceed. Lost among the stormy gusts, where will be your use to others or my recompense for your loss? You will not even exist to repent of this mad desertion of your home. Adieu! For ever and for ever, adieu!”

“Adieu, but not for ever,” answered the Vapours, as they dispersed before the wind.

It was not a satisfactory parting, perhaps; for, often as their race had made the journey round the earth, it had never fallen within the power of any portion of them to explain the course of their career, to the surface sea, which had originally grudged their departure. However, the Vapours had now commenced their circuit, and were carried onward by the steady south-east trade-winds to the regions of equatorial calms, that

wonderful belt of heat and accumulation, where they were met by breezes which in like manner were travelling from the north, and here this meeting caused for a while a lingering in the career of both. But these opposing winds, laden with vapours from the two hemispheres, had each their mission, and worked under an appointed law.

It was their province to carry the exhalations from north and south into the cooler upper sky where once more their course was free to travel round the world. Lifted up thus, however, no sooner had the Vapours entered a more temperate atmosphere, than their particles expanded, and a portion of them clung together in drops, which, whilst under the influence of excessive heat, was never the case. They thus became much heavier than before; so heavy, indeed, that the winds were not able to bear them aloft.

“You cannot carry us all,” said the Vapours to their struggling supporters. “Some of us will, therefore, return with a message of comfort to the mighty Sea, to tell him all is well.”

But even when they came down in torrents of rain to his bosom, the Sea grumbled still. “It is well that a part, at least, of what was lost, returns,” said he. But he neither knew nor cared what became of the rest.

The rest, however, fared happily and well; for high above earth and sea - so high, indeed, that they in no way interfered with the winds that swept below - they were borne along by the upper currents of air which were travelling to the north, and carried them forward on their journey of beneficence, and never-ceasing good.

Surely, it must have been a sweet sensation to be drifted along by a never-varying breeze through the higher regions of the sky, undisturbed by care, in a dream of delicious idleness and ease. But this was but a portion of the career of the Vapours from the Sea. At the next meeting, at the outskirts of the tropics, with travellers like themselves coming in the opposite direction, there was a fresh pressure of opposing breezes, a temporary lingering, and then a descent, by which they left those higher regions forever. Henceforth, they were to be dispersed by surface winds on their course of usefulness to man.

And if, when cradled in that blissful passage high over the tropics, those Vapours had for a time forgotten their mission, there was no possibility of forgetting it henceforth. Taken up with triumphant delight by all the varying breezes that sport over the northern hemisphere, there was no direction in which they were not to be found. A portion was wanted here, another portion here; the snows of Iceland, and the vineyards of Italy, the orange groves of Spain, and the river which pours over the mighty rocks at Niagra, must all be fed at their appointed seasons, and the food was travelling to them now.

But the eye would weary which strove to look sympathizingly round the vast expanse of the globe. It is enough if we can follow the Vapours through some stages of their journey of love.

On the summit of a mountain, over whose sides the gorse and heather were wont to flower together in bright profusion, and their lovely intermixture of hues, all the ground was parched and dry. A burning sun by day, rarely followed by dewy nights; a summer drought, in fact, had ruled for weeks over the spot, and the shrunken flower-buds and

parched leaves bore painful witness to the fact. The little mountain tarn below was almost dry, and the Sundew plants by its sides, which were wont to revel in the damp surrounding moss, had lost their nature altogether, and never now offered their coronet of sparkling drops to the admiration of those that passed.

The pretty tumbling waterfall lower down, too, which travellers used to delight to visit, and which was fed by streams from the hills, was reduced to a miserable trickle. Cottage children were sent to fetch water from distances so great, that they sat down and wept by the road-side on their errand; and farmers wore a gloomy, anxious look, which told of a thousand fears about their crops and cattle.

But, while they were thus troubled and careful, lo, the rescue was coming from afar! Yea, travelling towards them upon the wings of the wind. Vapours from tropical seas, Vapours which had left behind them their no-longer-needed salt, were coming accumulated as clouds, to fall as gracious rain and dews upon the thirsty regions of the North.

They are variable and fantastic winds, perhaps, that course over the northern hemisphere. Not steady and uniform in their direction, like the trade-winds in the Tropics; nor like those upper currents far above the trade-winds, which carry the Vapours to the second belts of calms. No! Variable and fantastic they certainly are, and, therefore, we cannot reckon on their arrival to a day, - nay, not to a month; but on their arrival at last, we may always surely depend, and perhaps, in this trial of patient expectation, a lesson of quiet faith is intended to be learnt.

And so, just as farmers, and cottage children, and the earth, and its flowers and leaves, and springs of water, had all sunk into a state of dismal distrust and discomfort, the deliverance came to them as they slept!

Slight variations in the wind had been observed for more than a day; but still no change of weather took place, until one night a steady breeze from the southwest set in, and prevailed for hours. And presently there was a gathering up of clouds all over the sky, though in the darkness of the night their arrival passed unobserved.

Gracious clouds! They were the Vapours of the Sea, which, after many wanderings, had found their way here, at last, on their mission of love. And, lo! The sound of waters was heard once more on the dried-up hills, and sweet, heavy showers dropped down on the delighted earth. All night long it continued, and all night long the earth was streaming tears of joy; and another day and another night succeeded, during which more or less of rain or dew continued to descend.

“Welcome, welcome, oh ye showers and dew!” were the Earth’s first words; and, “Leave me now no more,” her constant after-cry.

“Poor Earth, poor Earth!” murmured the Vapours, which, condensed into rain-drops, were trembling, like diamonds, on the leaves and flowers in the sunshine of the second dawn. “Poor Earth, poor Earth! You too refuse to learn the law which brought us here. What you have received so freely, will you not freely give?”

“Nay; but linger with me yet,” expostulated the Earth; “and let me rather store you

up for my own use hereafter. What do I know of the future, and what it may bring forth? How can I be sure that the fitful winds will supply me again in time of need? I cannot afford to think of others. Leave me, leave me not."

"None must store against an uncertain future evil, when so many are suffering under a present one," replied the Vapours; "nevertheless, a message of comfort will come to you, after we are gone."

And so, when the sun shone out in his heat and glory, the diamond rain-drops were drawn upwards from the flowers and leaves into the air once more. Only the little Sundews kept their coronets of crystal beads throughout the day, as was their custom; though how they managed it, it would be hard to say.

Perhaps as their own natural juices are so thick and clammy, these, mingling with the Vapours as they exuded, held them longer fast.

"You are our prisoners," was the triumphant cry of the Sundew leaves, as they glistened in their liquid gems."

"Oh, you shall go, you shall go; but only gradually, as the moisture courses through our veins to re-supply your place. This is our way of life. But we must hear all from you first. All! all! all! and most of all, why you have tarried so long, till we had almost perished in the dreadful drought?"

It was a long story the Vapours had then to tell, of their irregular passage to the Polar Seas; and how, after their chilly sojourn there as snow, they had passed southwards once more on the summits of drifting icebergs, and again been exhaled, and given back to the ministry of the wandering winds.

"Surely," said they, "we have touched no place in all our wild journeyings where we have not left some blessing behind. Here and there, indeed, folks think they have had too much of us, and here and there too little; but, oh, my delicate friends, believe us, we are faithful and true to our mission all over the world. Behold, we pour into the earth as rain, or slide into it as moisture; and lo, the soil gives its gases into our care, and the roots of the plants draw us and them up together, and feeding on them, expand and flourish, and grow; and when the useful deed is done, and the sun shines down on our labour, up we ascend again to its absorbing rays, to be carried forward again and again, to other gracious deeds. Blame us not therefore, if, in turning aside to some other case of need, we have come a little late to your hills. Own that you have not been forgotten!"

"It is true," murmured the Sundews in return; "but remember, we pine and die without your presence."

"Dear little Sundews, there is not a plant in all the boggy heaths that is so dear to us as you are. See now, we linger with you yet; there is moisture in our mossy bed around this tarn to last for many weeks; and as ever a portion from below, so that your leaves shall never miss their sparkling diadem of gems."

The Sundews had no need to tremble after that; but as the exhalations went up from the surface-ground, and the moisture sank lower and lower down into it, a fear stole over the Earth, that another drought might arise, for she knew not that all would return to her

again in due season. But, when the cool of the evening Vapours descended upon her bosom, as refreshing mist and dew, she received a portion of comfort. Nevertheless, like the Sea, she grumbled on. "It is well that a part, at least, of what was lost, returns!" she remarked in her greedy anxiety, as the Sea had done before; and like him, she neither knew nor cared what became of the rest.

There was a mission for every portion, however, and through the now saturated ground the rain-drops sank together, amidst roots, and stones, and soil, moistening all before them as they went, and replenishing the springs that ran among the hills.

The tumbling Waterfall had, by this time, well nigh given up hope. The mournful trickle with which it fell was an absolute mockery of its former precipitous haste; - when lo! Some sudden influence is at work, a rush of vigour flows into the exhausted veins; there is a swelling in the distant springs, nearer and nearer it comes, and now over the rocky ledge there is a heavier flow: a little more, and yet a little more; and then, at last, a rush of water full and fresh is heard!

"Welcome, welcome! Oh, ye Springs and Floods," cried the Waterfall, as once more it rolled in its beauty along its precipitous course, scattering foam and spray upon the moss and flowers that graced its edge. "Stay in the mountains always, that I may thirst no more; leave me, leave me not again!"

"You too, who live by giving and receiving," cried the Vapours as they flushed the stream - "you too, wishing to stop the gracious course of good? Oh shame, shame, shame!"

And then, as if in mockery of the request, a playful gust blew off from the waterfall as it descended, some of its glittering spray, and tossed it to the sunshiny air, where it dispersed once more in smoky mist, - but only to return again in time of need.

Down in the lower country, where stately houses, enclosed in noble parks, adorned the land, a beautiful lake lay stretched under the noon-day sun. It was fed by the stream which, at some miles' distance, received the tumbling waterfall into its course, and then ran through the lake's broad sheet, escaping at the further end in a quick flowing rill. On the placid mirror-like surface majestic swans swept proudly by, not unsusceptible of the freshening in the water from the filling of the springs above.

A little pleasure-boat was floating lazily about, impelled occasionally forward by the stroke of an oar from a youth, who with one companion of his own age, and an elderly man who sat abstractedly reading a book, formed the passengers of this tiny ark.

The rower's young companion was lounging in a half-sitting, half-reclining posture in the bow of the boat, and both were gazing at the old Baronial Hall, which, with its quaint turrets, long terraces, and picturesque gardens, faced the lake at a slightly distant elevation where it stood embosomed in trees.

"Well! If the place were to be mine," observed the loungee, with his eyes fixed upon it, "I know exactly what I should do. I would throw all your agricultural and educational, and endless improvement schemes overboard at once; leave them for those whose business it is to look after them; and enjoy myself, and live like a prince while I had the

chance.”

“And die worse than a beggar at last,” cried the other youth, as he rested on his oars and looked at his cousin who had spoken - “I mean without a friend! You cannot secure even enjoyment, in stagnation,” added he. “The very pond here is kept pure by giving out through a stream at one end, what it receives through a stream at the other.”

“And the stream from which it receives,” said the old man, looking up from his book, “is a type of God Himself; and the stream to which it gives, is a type of the human race. Those who receive from the fountain, without giving to the stream, work equally against the laws of Nature and of God.”

A few strokes of the oar here carried the boat away, but surely that was the voice of him who, in the bygone year, had startled the ignorant murmurer in the voyage across the Line? Well it is with those who in the secrets of Nature read the wisdom of God!

Softly did that summer evening sink upon the park and the old Baronial Hall, and heavy were the mists and dews that hung over the woods, and gardens, and flowers, and great was the rejoicing in the country round, when after a time, they were followed by fertilizing rains. Fertilizing rains! - the words are easily spoken, but who knows their full meaning, save he who has watched over corn-fields or vineyards, threatened with ill-timed drought? We take a great deal for granted in this world, and expect that every thing as a matter of course ought to be fit into our humours, and wishes, and wants; and it is often only when danger threatens, that we awake to the discovery, that the guiding reins are held by One whom we had well-nigh forgotten in our careless ease.

“If it had not thundered, the peasant had not made the sign of the cross,” is the rude proverb of a distant land; and peasant and king are alike implicated in its meaning.

“It is all right now,” observed the farmer, as he returned home, after contemplating the goodly acres drenched and dripping with rain.

And it was all right indeed, for, long after the farmer had forgotten his previous anxieties in sleep, the circle of blessing was at work in the length and breadth of his fields. There, the condensed Vapours sank into the willing soil, which gave to them her gasses and her salts. There, the fibres of the roots of corn or grass sucked up the welcome food which brought strength and power into the juices of the plant; and then, by slow but sure degrees, the stunted ears began to fill, and men said the harvest would be good.

“Stay with us for ever,” asked the Corn-ears of the Vapours, as they felt themselves well under the delicious influence. The Vapours made no answer, for they did not like to speak of death; but they dealt gently with the Corn, and did not leave it till it had ripened gradually for the harvest, and no longer needed their aid; and then they exhaled once more into the air, to follow out their mission elsewhere.

A curly-headed urchin stood by a pump, looking disconsolately at the huge heavy handle, which he could not lift. A little watering-pot was grasped in his hands, and it was easy to see what he wanted. Someone passing by observed him, and with a smile gave him help. A few strokes of the handle brought up the water from below, the little watering-pot was filled, and the child ran away. He had a garden of his own: a garden

in which a few kidney-beans in one place, and sweet peas in another, with scatterings of mustard and cress, formed a not very usual mixture; but it served its purpose of giving employment and pleasure to the child.

The kidney-beans which he hoped to eat one day at dinner, were evidently the objects of his most attentive care, for he soaked them again and again with the water from his pot, tossing only a few drops of it over the flowers. Little guessed he of the long long journey the Vapours of the Sea had made before they helped to fill the springs which fed the well over which the pump was built. Little guessed he either of what would become of them when, after helping to fill his kidney-beans with delicate juices, they returned back to the ministry of the winds.

When he touched his pinafore, after he had finished his work, he found it soaked with wet; and when, soon after, he saw it hung in front of the fire to dry, he sat down and amused himself by watching the steam as it rose from the linen, under the influence of the heat.

Trifling it seems to tell; - an every-day occurrence of life, not worth a record: yet there was a law even for the Vapour that rose from the infant's pinafore in front of the nursery fire. Nothing shall be lost of that which God has ordained to good; and the Vapours were soon on their mission again. Through chimney or window they escaped to the cooler air, and returned to their ceaseless work.

"Give us of your salts," was at last their request, as they percolated through the lower ground to join the mighty rivers which ran into the Sea. "Give us of your salts, and lime, and mineral virtues, oh thou Earth! That we may bear them with us to the Sea from whence we came."

"Is not the Sea sufficient to itself?" inquired the jealous Earth.

"None are sufficient to themselves, oh, careful Mother!" answered the Vapours as they streamed in water along their way. "Small and great, great and small, we all depend on each other. How shall the Shells, and the Coral Reefs, and Zoophytes of the deep, continue to grow and live, if you refuse them the virtues of your soil? Give us of your salts, and lime, and the mineral deposits of your bosom, oh, Mother Earth! That they may live and rejoice."

"Have you nothing to offer in return?" asked the still-hesitating Earth.

"Do you not know that we have left a blessing behind us wherever we have been?" exclaimed the Vapours. "But no matter for the past. See, we will do ourselves as we would have you do. We will bind ourselves in beauty in the caves of your kingdom, and live with you for ever."

So, as they passed on their way, loading themselves with the virtues of the Earth, some turned aside, and sinking to the subterranean depths, oozed with their limy burden through the roofs of caverns and sides of rocks, and hung suspended in graceful stalactites, or shone out in many-sided crystal forms.

"Now I am satisfied," observed the Earth. "What I see I know. They have left me something behind for what they have taken away."

“And now we are satisfied,” cried the rest of the Vapours, as they poured into the rivers and were carried out into the Sea. “Have we not returned with a blessing and treasures in our hand?”

And thus, from age to age, ever since the primary mists went up from the Earth and watered the whole face of the ground, the mighty work has gone on, and still continues its course. For not to inactivity and idleness did the Vapours now return, but only to recommence afresh their labours of love. Yes! Evermore rejoicing on their way, through all varieties of accident, of climate, and of place, whether as Snow or Hail, as Showers or Dew, as Floods or Springs, as Rivers or as Seas, the waters are still obediently fulfilling His word who called them into being, and are carrying the everlasting Circle of Blessing round the world.

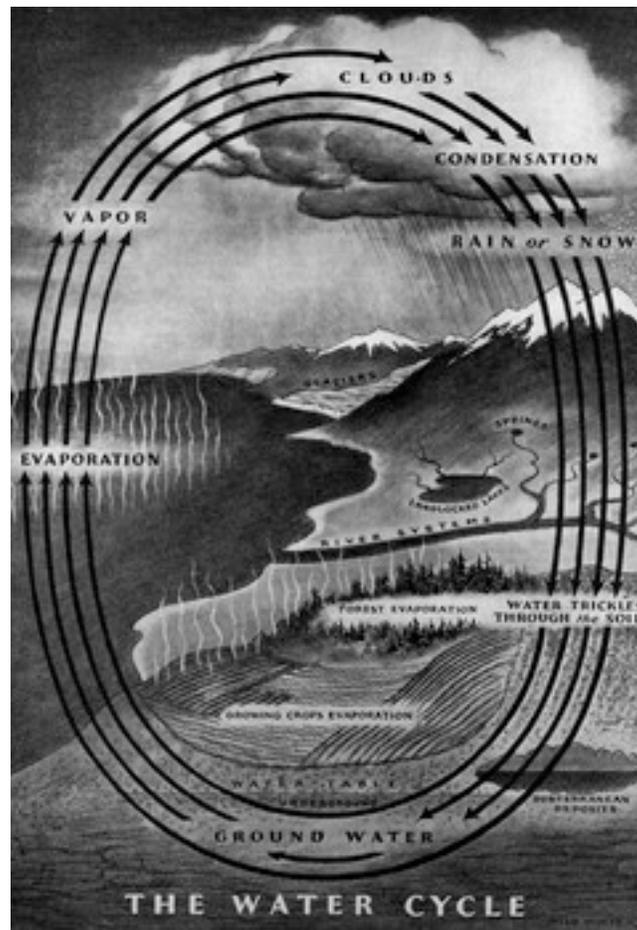
Oh, ye showers and dew; oh ye winds of GOD; oh, ye ice and snow; oh, ye seas and floods; verily, even when man is mute and forgetful, ye bless the Lord, ye praise Him and magnify Him for ever!

Lesson 9

The Water Cycle

Study the diagram below. Explain orally how the water cycle works, either to your teacher or to another student, with your teacher's approval.

You may need to do some research in order to explain this properly.



Lesson 9
Experiment: Condensation

On the following lines, explain what condensation is, and then do the following experiment.

1. Find a mirror or a window
2. Take a deep breath
3. Open your mouth and breathe on the glass

Do you see how the glass became cloudy when you breathed on it? This is because your breath contains water, although you cannot see it. The water is a type of gas, or vapor, which is mixed with the air. When the warm vapor from your breath hits the cold glass, some of it turns into a liquid. Tiny droplets form on the mirror or window, and this is called condensation, or steam. You may also see an example of this on your bathroom mirror after you've just taken a hot shower.

Can you think of any other examples of condensation that you have seen?

Lesson 9
Experiment : Evaporation

On the following lines, explain what evaporation is, and then perform the following experiment.

You will need the following items:

- Chalk
- Water
- A tape measure

Step 1: Go outside and find a sunny area and a shaded area. This will work best if you can do this on concrete.

Step 2: Pour an equal amount of water onto the concrete, one in the shade and one in the sun. With the chalk, trace a line around the outside of each puddle.

Step 3: Measure across both puddles with the tape measure, and record your measurements. Return to the area every hour for 4 hours, and keep measuring the puddles. Keep drawing new lines around the puddles as they get smaller.

What happened to the puddles? Which puddle evaporated faster? Why is that?

