Fourth Quarter
Chapter 2- Weather Disturbances
Lesson 6: Describing the Effects of the Winds, Given a Certain Storm Warning Signal

Duration: 5 days

I. Objectives:
1. Describe the effects of the winds, given a certain storm warning signal
2. Infer that storm warning signals affects living things and environment
3. Describe the effects of the winds, given a certain storm warning signal

II. A. Materials
pictures visualizing the meaning of storm signals, charts, paper strips

B. Reference/s:

- Science Teacher's Guide 4, pp. 329-331
- Developing Science Power 5, pp.206 – 207
- http://www.rappler.com/move-ph/issues/disasters/93894-pagasa-storm-signal-no-5
- Science Spectrum 5, pp. 283 – 284

C. Process Skills: inferring, contrasting, communicating

D. values Integration:
- Disaster preparedness
- Keeping safe during different weather conditions

Day 1 (Describe the effects of the winds, given a certain storm signal)

III. Learning Tasks

A. Engagement:
1. Show pictures affected with typhoon.
2. Ask:
   What do you think was the storm signal raised in this place?
   What do you think is the extent of damage in this situation?
   What government agency announces the storm signal?

B. Exploration:
1. Group the pupils into five.
2. Refer to LM Activity No. 1- " Do You Know Me?"

C. Explanation:
1. Let the groups present/explain their outputs.

Day 2: **D. Elaboration/ Extension**:

1. Discuss further the meaning of Storm Signals.
(The teacher should show drawings/pictures of each storm signal to show visual effects.)

Background Information for Teachers:

Meaning of storm Signals

Signal No.1 is put into effect when a maximum speed of not more than 60 kph is expected to affect a certain place in at least 36 hours. In this situation, impact of winds may cause twigs and branches of small trees to be broken, some banana plants maybe titled or put down, and some houses of very light materials, like nipa and cogon. Classes in preschool levels in all public and private schools in affected communities are automatically suspended or broken.

Signal No. 2 is announced when the maximum wind speed is greater than 60 kph, but not more than 100 kph is expected to affect a cert5ain place in at least 24 hours,. In this situation, some coconut maybe tilted, few big trees may be uprooted, large number of nipa and cogon houses may be partially or totally unroofed, some old galvanized roofing may be peeled off, and, in general, the winds may bring light to moderate damages to the communities affected. With storm signal no.2, classes in preschool, elementary and high school levels n all public and private schools in the affected

Signal No. 3 is announced when a maximum wind speed of more than 100 kph up to 185 kph is expected to affect a certain place in at least 12 to 18 hours. In this situation, nipa houses may be destroyed, and there may be considerable damages to structures of light to medium construction. There may be widespread disruption of electrical power and communication services, and, in general, moderate to heavy damage may be expected, practically in agricultural and industrial sectors. With public storm signal no. 3, people are advised not to travel, especially by sea or air transportation, and people should also seek shelter in strong buildings, evacuate from low-lying areas, and stay away from seacoasts or river banks. Classes in all levels are automatically suspended in affected communities.

Signal No. 4 is declared when very strong winds of more than 185 kph is expected to affect a certain area in at least 12 hours. In this situation, many large trees may be uprooted and most residential and buildings of mixed construction may be severely damaged, electrical power disruption and communication services are disrupted, and, in general, massive damages are expected in affected communities.

Signal No. 5 is declared has very heavy to widespread damage and it has very strong winds of more than 220 kph.

2. Ask:
   Why is it necessary for us to know the meaning of each storm signal?
   (It is necessary for us to know the meaning of storm signal so that we can prepare for the coming typhoon and to be safe and protected.)

E. Evaluation:

1. Group the class into three.
2. Write the data needed on the chart below.

STORM SIGNAL NO.	LEAD TIME (hours)	WINDS (km/h)	IMPACTS OF THE WIND
1			
2			
3			
4			
5			

IV. Assignment:
Copy or cut out a news about the storm signal or typhoon from the newspaper.

Day 3:

A. Engagement:

1.Let the pupils present/ report their assignment about the storm signal or typhoon.
2. Ask:
   Do you have the same report about storm signal?
   Is it stated in the news of how does the storm formed?

B. Exploration:

1. Group the pupils into four.
2. Study the picture.
3. Write your understanding about the picture.

C. **Explanation**:
1. Let each group report their output.
2. Ask:
   How the huge ring of cloud form?
   How this called “seeding” help?
   What is the movement of storms in the Northern Hemisphere and in the Southern Hemisphere?

D. Extension /Elaboration:
Discuss more about the storms.

Background Information for Teachers:

Storms are known by other names in other places. It is hurricane in North America and in the Caribbean. It is cyclone in the region in the region in Indian Ocean and southeast Pacific I the Philippines and Southeast Asia, it is called typhoon.

Storms form only in the tropics. This weather disturbance draws its energy from the warmth of tropical oceans. It is a weather disturbance that has a wind force of 60 kms per hour and above.

A typhoon forms when the internal heat of ocean surface stirs up moist air over the ocean. A calm area called the “eye” is created. The huge column of rising hot air develops around the eye.

As the moist air spirals up and cools, it condenses into rain. As the “eye” narrows, the winds blow with much force. A typhoon has developed.

A typhoon bring so much rain. The rain causes flooding. Coastal places are swamped by huge waves made by winds blowing across the sea of 300 kms per hour.

E. Evaluation:

A. Write TRUE if the statement is correct and FALSE if it is not correct.

1. Typhoons develop in tropical places. (TRUE)
2. The heat of the ocean waters sends warm water down. (FALSE)
3. Philippine is a typhoon prone area. (TRUE)
4. Hurricane is the other name of storm in Indian Ocean. (FALSE)
5. The moist air arise spirals up, cools, and falls down as heavy rain. (TRUE)

B. Answer the question briefly.

1. What other names are given to this weather disturbance?
2. How does a thunderstorm develop into a typhoon?

Day 4: Infer that storm warning signals affects living things and environment

A. Engagement:

1. Show the chart of Beaufort Scale with storm.
2. Ask:
   What are the numbers do you think was the storm signal raised in this place?
   What do you think is the extent of damage in this situation?
   What government agency announces the storm signal?

B. Exploration:

1. Group the pupils into four.
2. Refer to LM Activity No. 2- " Know Me More?"

C. Explanation:

1. Let the groups present/explain their outputs.

D. Elaboration/ Extension:

What scale shows the different wind velocities and their corresponding effects?

(The Beaufort Scale shows the different wind velocities and their corresponding effects.)

What are the forces belong to storm signal no.1?
What are the forces belong to storm signal no. 2?
What are the forces belong to storm signal no.3?
What are the forces belong to storm signal no. 4?
What are the forces belong to storm signal no. 5?

E. **Evaluation**:

Draw a picture shows the effect of winds regarding to its signal

Day 5: Learning Tasks

A. Engagement:

1. Let the pupils share their experience with the different storm warning signals.

3. Ask:
   What do you think was the storm signal raised in this place?
   What do you think is the extent of damage in this situation?
   What government agency announces the storm signal?

B. Exploration:

4. Group the pupils into three.
5. Refer to LM Activity No. 3

C. Explanation:

Let the groups present/explain their outputs.

D. **Extension/Elaboration**:

1. What are the storm warning signals?
2. What are the impact of the wind in the environment and living things?
3. How does the storm signal affect the winds?

E. **Evaluation:**

Write the missing data on the chart.

STORM SIGNAL NO.	LEAD TIME (hours)	WINDS (km/h)	IMPACTS OF THE WIND
1	36		
2	24		
3	18		
4	12		
5	12		