

## How the Natural Events dealt with in Curriculum? Example of Social Studies and Science Lessons\*

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### Abstract

Since its existence, human beings have been trying to get to know the universe they live in, to understand natural events. Earthquake, volcanism, landslide, rock falls, erosion, tsunami, hurricanes, sand-dust storms, tornado, abundance of water, lack of water, are some of the natural events. These events, which are necessary for the establishment of the natural balance, are called disasters when they damage people and their works. For students to understand and explain natural events from an early age, these issues should be included in the curriculum. In this study, Social Studies and Science Curriculum Curriculums were examined in order to recognize natural events in primary school. The qualitative research method was used in this research. According to research aim, social studies and Science Lesson Curriculums were analyzed with document analysis. As a result, in the Social Studies curriculum four, and the Science curriculum six special purposes were related with natural events. In the Social Studies curriculum nine 4th grade learning outcomes were related with natural events. In the Science curriculum twenty 3rd grade learning outcomes and seventeen 4th grade learning outcomes were related with natural events.


**Keywords:** Natural Events, Social Studies Curriculum, Science Curriculum, Primary Education

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Recently natural events that occur because of human-nature interaction, disasters as a result of natural events need to focus on education. It was questioned what kind of education must be for to understand the nature and live in harmony with it. According to the literature, the effort to understand nature is perceived as a task that should be fulfilled and theoretically learned in various school levels rather than the application dimension and the application dimension of the subject is neglected. For example, it was found that the geography activities included in the social studies course books are not in an approach that measures the upper cognitive level targeted by the curriculum (Büken & Artvinli, 2021). How do curriculum play a role in such results? It is important in terms of how and in which dimension of natural events are handled in the curriculum and the textbook are two different dimensions of the issue.

In the dictionary of biology terms (1998), nature is identified as “the environment that constantly reproduces and changes itself outside of human activities, consists of living and non-living substances, and provides natural resources.” (TDK). Epeirogenic style movements, earthquake, volcanism, landslide, rock falls, erosion, sedimentation, continuous high and low temperatures, sweltering burning temperature and freezing cold, frost event, glaciation, avalanche falls, sea-ocean current systems, tsunami, hurricanes, sand-dust storms, tornado, constantly blowing cold and hot winds, long-term dense fogs, heavy rains, lightning strikes, flood-like flows, flooding, rise and fall of the groundwater level, abundance of water, lack of water, continuous star shootings, changes in the geographical position of the galaxies in the solar system, are natural events (Biricik, 2001). Changes in the natural balance of the world are actually a natural process. This process has been going on since the world began to form. Earthquakes, global climate changes, volcanic eruptions, storms and others are the products of this process. However, when such natural events begin to damage human life and activities, they are called natural disasters (Karakuş, 2013). Natural events that occur depending on both internal and external dynamic factors are natural in their own functioning, they have occurred periodically or continuously, with varying degrees of severity, throughout geological times; and it still continues (Biricik, 2001).

Since its existence, human beings have been trying to get to know the universe they live in, to understand natural events and how to fight against these events (Küçük and Demir, 2009).

During the period from the formation of the world to the present day, each geographical region hosts many natural events depending on its internal dynamics, namely geophysical, meteorological, hydrological and climatic features. However, although not every natural event has the potential for disaster, it can often turn into a disaster due to human factors such as unconscious urbanization, unplanned industrialization, uncontrollable population growth and migration, as well as climate change, which has become a global problem (Anadolu Kılıç, 2021). Disasters can be defined as events that occur with natural hazards, mainly or completely caused by natural factors, negatively affecting the socio-economic and cultural activities of the society, causing significant loss of life and property (Şahin and Sipahioğlu, 2002). The necessity of determining the disaster potential for each geographical region gains importance, especially when considering the negative impact of material losses and moral damages on the national economies due to the increase in the rate of natural events turning into disasters in recent years (Anadolu Kılıç, 2021).

For living with nature closely we shouldn't be against to its power. Human should find the way of living with nature easily. Necessary precautions must be taken to prevent natural events such as earthquakes and floods from turning into disasters. Misbehaviors made by people can accumulate in the long run and create global problems. Climate crises, pollution of the seas, extinction of some living species are the consequences of human misbehavior. In order to understand nature and natural events, it is necessary to make students love and introduce nature from an early age. In this research, the purposes and learning outcomes of the Social Studies and Science curriculums were examined for the students to recognize nature and natural events in primary school.

Which natural events are included in the special proposes of Social Studies and Science lesson curriculum?

Which natural events are included in the learning outcomes of Social Studies and Science lesson curriculum? have been tried to be determined.

### **Method**

The qualitative research method was used in this research. Qualitative research is aimed at understanding and discovering the problems that individuals or groups perceive individually or socially (Creswell, 2009). Qualitative research is defined as research in which a qualitative process is followed to reveal perceptions and events in a realistic and holistic way in the natural environment, and qualitative data collection methods such as observation, interview and document analysis are used in qualitative research (Yıldırım and Şimşek, 2011).

According to research aim, 2018 Social studies and Science Lesson Curriculums were analyzed. Document analysis is a systematic method used to examine and evaluate all documents, both printed and electronic materials. Like other methods used in qualitative research, document analysis requires the examination and interpretation of data in order to make sense of it, to form an understanding about the subject, and to develop empirical knowledge (Corbin & Strauss, 2008).

For analyzing the data content analysis was used. The main process in content analysis is to bring together similar data in the framework of specific concepts and themes and to interpret them in a way that the reader can understand. (Yıldırım and Şimşek, 2011, p. 227). In this study, the special objectives and outcomes of the curriculum were examined according to the situations involving natural events.

### **Findings**

The findings of the purposes and learning outcomes of Science and Social Studies Lessons Curriculum which are related to the natural events are shown on the Table 1-5.

**Table 1***Natural Events in the Special Purposes of the Social Studies Curriculum*


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Recognizing the general geographical features of the world and the environment they live in, explaining the interaction between people and the environment and developing their spatial perception skills.

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Being aware of the limitations of the natural environment and resources, trying to protect natural resources with environmental awareness and having a sustainable environmental understanding.

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Identifying similarities and differences between people, objects, events and phenomena, perceiving change and continuity by questioning historical evidence from different periods and places.

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To show sensitivity to issues that concern their country and the world.

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It is found that four of the eighteen special purposes in the program are directly or indirectly related to natural events.

**Table 2***Natural Events in the Special Purposes of the Science Curriculum*


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To provide basic information about astronomy, biology, physics, chemistry, earth and environmental sciences and sciences and engineering applications

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In the process of discovering nature and understanding the relationship between human and environment, adopting scientific process skills and scientific research approach and producing solutions to the problems encountered in these fields.

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To realize the mutual interaction between individual, environment, and society; To develop awareness of sustainable development regarding society, economy and natural resources.

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To take responsibility for daily life problems and to use science knowledge, scientific process skills and other life skills to solve these problems.

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To raise interest and curiosity about the events occurring in nature and its immediate surroundings, to develop an attitude reasoning ability, scientific thinking habits and decision-making skills using socio-scientific issues.

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It is found that six of the ten special purposes in the curriculum were related to natural events.

**Table 3***Natural Events in 4th Grade Social Studies Lesson Achievements*


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SB.4.3.1. Makes inferences about the location of any place in the environment.

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SB.4.3.3. Distinguish the natural and human elements in the living environment.

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SB.4.3.4. Observing the weather events occurring around him, he transfers his findings to illustrated graphics.

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SB.4.3.5. It makes inferences about the landforms and population characteristics of the place where it lives and its surroundings.

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SB.4.3.6. Makes necessary preparations for natural disasters.

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SB.4.4.5. Uses technological products without harming himself, others and nature.

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SB.4.5.1. She/He distinguishes her/his wants and needs and makes conscious choices between the two.

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SB.4.5.3. Exhibits conscious consumer behavior as a responsible individual.

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SB.4.5.5. It uses the resources around it without wasting it.

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It is found that nine learning outcomes in the 4th grade are related with natural events. It is aimed to observe the weather events, get information about landforms, making preparation for the natural disasters, behaving responsible for the environment.

#### **Table 4**

##### *Natural Events in 3rd Grade Science Lesson Achievements*

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F.3.1.1.1. She/he realizes that the shape of the Earth is spherical.

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F.3.1.1.2. Prepares a model for the shape of the Earth.

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F.3.1.2.1. Comprehends that there are lands and waters on the surface of the Earth.

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F.3.1.2.2. It explains that there is a layer of air that surrounds us on Earth.

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F.3.1.2.3. Compares the areas covered by land and water on the earth's surface on the model.

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F.3.2.3. Discusses the dangers that moving objects may cause in daily life.

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F.3.4.2.1. It classifies the substances in its environment according to their states.

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F.3.5.2.1. He classifies the light sources around him as natural and artificial light sources.

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F.3.5.3.1. He concludes that every sound has a source and that sound radiates in all directions.

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F.3.5.3.3. Classifies the surrounding sound sources as natural and artificial sound sources.

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F.3.5.4.1. She/he observes that sound intensity is important for hearing and realizes that not every sound can be heard by the human ear.

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F.3.5.4.2. Explain the relationship between sound intensity and distance.

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F.3.6.1.1. Classifies living and non-living things using the examples around them.

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F.3.6.1.2. It presents the results of observation of a plant's life cycle.

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F.3.6.2.1. Recognizes the environment in which he lives.

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F.3.6.2.2. He takes an active role in the cleaning of the environment he lives in.

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F.3.6.2.3. Explain the differences between natural and artificial environment.

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F.3.6.2.5. Realizes the importance of the natural environment for living things.

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F.3.6.2.6. Suggests solutions by researching to protect the natural environment.

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F.3.7.2.2. It discusses the harms of battery wastes to the environment and what needs to be done in this regard.

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It is found that twenty learning outcomes in the 3rd grade are related with natural events. It is aimed to get information about Earth, Earth's surface and recognize the importance of the environment for living things.

### **Table 5**

#### *Natural Events in 4th Grade Science Lesson Achievements*

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F.4.1.1.1. It states that the land layer of the earth's crust consists of rocks.

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F.4.1.1.2. Relates rocks to mines and discusses the importance of rocks as raw materials.

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F.4.1.1.3. Explain the formation of fossils.

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F.4.1.2.1. Explain the difference between the rotation and rotation of the Earth.

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F.4.1.2.2. Explain the events that occur as a result of the movements of the Earth.

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F.4.2.1.1. Explain the relationship between living life and nutrient content.

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F.4.4.3.1. Compares the basic properties of the states of matter.

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F.4.4.3.2. Gives examples of different states of the same substance.

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F.4.4.4.1. Designs experiments for heating and cooling of materials.

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F.4.4.4.2. Designs an experiment to show that substances can change state with the effect of heat.

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F.4.4.5.3. Discusses the separation of mixtures in terms of their contribution to the country's economy and effective use of resources.

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F.4.5.3.1. Questions the causes of light pollution.

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F.4.5.3.2. Explains the negative effects of light pollution on natural life and observation of celestial bodies.

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F.4.5.3.3. It produces solutions to reduce light pollution.

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F.4.5.5.2. Explain the negative effects of sound pollution on human health and the environment.

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F.4.6.1.1. It takes care to be economical in the use of resources.

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F.4.6.1.2. Realizes the importance of resources and recycling necessary for life.

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It is found that seventeen learning outcomes in the 4th grade are related with natural events. It is aimed to get information about fossils, Earth movements, pollutions and its effects.

### **Conclusion and Discussion**

In conclusion, in the Social Studies curriculum four, and the Science curriculum six special purposes were related with natural events. In the Social Studies curriculum nine 4th grade learning outcomes were related with natural events. In the Science curriculum twenty 3rd grade learning outcomes and seventeen 4th grade learning outcomes were related with natural events. In the science curriculum it's aimed more about getting information about nature and the social studies curriculum it's aimed more about preparation for the natural disasters. In the research of İmalı (2014), a significant difference was found between the academic success of students related to natural events and the risks they pose in Science and Technology lessons, and between gender and the success levels of the schools they attend. In addition, according to the results of the interviews, it was determined that teachers and students wanted more practices and activities for disasters. In the research of Önal (2019), it has been determined that there are deficiencies and/or mistakes in both the information given and the visuals used on natural disasters in primary school textbooks. This situation causes students to carry these misconceptions and incomplete/incorrect information to other education levels and to reveal information errors in the spiral structure. The textbooks prepared within the framework of these results should be examined more carefully and prepared in a way that will not lead to misconceptions by removing incomplete and incorrect information. There was a significant difference in favor of the experimental group between the ability of the students in the experimental group, in which creative drama was used as one of the teaching methods in preschool education science activities, and in the control group, in which the direct instruction method was applied, to determine the cause-effect relationships of natural events. In other words, the use of creative drama improved children's ability to determine the cause-effect relationships of natural events in science activities (Erkoca Akköse, 2008). In the literature it's seen that research mostly are about natural disasters (Cin, 2010; Gürbaz and Karadeniz, 2021; Buluş-Kırıkkaya, Oğuz-Ünver and Çakın, 2011; Tokcan and Yiter, 2017) and these research shows that disasters education needs to be improved; students and teacher candidates have some misconceptions about disasters. So, it is possible to say for understanding the natural disasters correctly and acting right to the nature it should be take care more about the natural events. Knowing nature and natural events might make the human to live more harmonious with nature.

### **Suggestions**

How natural events dealt with in curriculum of other levels of education can be investigated. How natural events are included in textbooks can be examined. Measurement tools can be developed and applied studies can be carried out to determine awareness about natural events. Thus, it can be contributed to establishing a basis for disaster awareness.

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