

## *Sudan I.S.D. Science Benchmark Targets / Kindergarten*

### **Science**

#### **ASSURANCES**

##### 1. Tools of Science

The students will be able to gather, analyze and interpret information using selected equipment and tools to extend the senses, including *computers, hand lenses, thermometers, balances, collection nets, magnets, safety goggles, cups, bowls.*

##### 2. Reading & Writing

The student will read a variety of texts to gain information and write, through dictation to the teacher, language experience passages to inform; draw a picture, write a word or phrase (could be scribbling); write name.

##### 3. Vocabulary

The student will build and expand vocabulary, through a print rich environment, to increase fluency and understanding by incorporating scientific vocabulary into their everyday speaking, and listening routines.

##### 4. Know and Be Able to Do

The student will:

- demonstrate safe practices.
- ask questions.
- plan and conduct simple descriptive investigations.
- compare results with those of other investigators.
- use equipment and tools to extend the senses.
- communicate findings.
- give explanations based on information.
- measure and compare using standard and nonstandard units.
- make decisions using information.
- justify merits of decision.
- explain a problem and propose a solution.

\* indicates that this benchmark is a tested objective on the Elementary Science TAKS test

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### **Nature of Science / Science Processes**

**Throughout the year** students will master certain required skills. These skills are important to a student's understanding of the nature of science. The Science Processes are not designed to be taught in isolation. They are to be embedded in each Benchmark Target Module and some should be practiced each time science is taught. Please note that the Nature of Science / Science Process

Benchmarks are the same for every grade level from kindergarten through sixth grade. At each grade level, however, the teacher is expected to approach the skill at the level appropriate for their students' age, grade and cognitive development.

The student will:

1. Demonstrate safe and ethical practice in school, field, and home. (TEKS K.1.A / \*TEKS 3.1.A / \*TEKS 4.1.A / \*TEKS 5.1.A)
2. Use and dispose of materials wisely, conserve and recycle materials and resources when possible. (TEKS K.1.B)
3. Formulate testable hypotheses; plan and implement descriptive investigations. (TEKS K.2.B / \*TEKS 5.2.A)
4. Isolate variables and conduct controlled experiments; repeat experiments to demonstrate that repetition increases reliability of results. (TEKS 3.4.B)
5. Collect data by observing and measuring. (TEKS K.4.A / \*TEKS 5.2.B)
6. Gather, analyze and interpret information using selected equipment and tools to extend the senses, including *computers*, *hand lenses*, thermometers, *balances*, collection nets, magnets, safety goggles, *cups*, *bowls*. (TEKS K.2.C / TEKS K.4.A.B / \*TEKS 5.4.A)
7. Record data through graphic works including simple graphs, tables, maps, charts. (TEKS K.2.E / \*TEKS 5.2.E)
8. Draw inferences, in particular with regards to the validity of advertising, and analyze information. (TEKS K.3.A.B / \*TEKS 3.3.B)
9. Classify, analyze, and interpret information to make and justify decisions and construct reasonable explanations. (TEKS K.2.D / TEKS K.3.A / \*TEKS 5.2.C)
10. Communicate problems, propose solutions, ask questions, record results, and conclusions in student's own words. (TEKS K.1.A / TEKS K.2.D.E / TEKS K.3.C / \*TEKS 5.2.D)
11. Analyze, review and critique scientific explanations, hypotheses and theories as to strengths and weaknesses. (TEKS K.3.B / \*TEKS 3.3.A)
12. Represent the natural world using models and identify their limitations. (\*TEKS 3.3.C)
13. Evaluate the impact of research on scientific thought, society, and the environment. (TEKS 3.3.D)
14. Use scientific words and phrases to describe the natural world. (A.B.M.T.)
15. Connect grade level science concepts with the history of science and contributions of scientists. (TEKS 3.3.E / TEKS 4.3.E / \*TEKS 5.3.E)

italics indicate a tool that is required by the state

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## Science

### Physics (Systems)

#### Benchmarks 1-3

The student will:

##### 1. Systems and Parts

a) Identify parts that, when separated from the whole, may result in the part or the whole not

working, such as cars without wheels or a balance scale without a base. (TEKS K.6.D / ≈ TEKS 5.5.A.B)

b) Manipulate parts of objects such as toys, vehicles or construction sets that, when put together, can do things they cannot do by themselves. (TEKS K.6.E / ≈ TEKS 5.5.A.B)

c) Recognize and copy patterns seen in charts and graphs. (TEKS K.5.C)

##### 2. Force and Motion

a) Observe, describe, and record changes in position and movement of an object, such as a

car, where acted upon by a force. (TEKS K.7.A. / ≈ TEKS 3.6.A)

##### 3. Energy Transformation

a) Verify that vibrating an object can produce sound. (\* TEKS 5.8.D)

b) Recognize everyday examples of energy. (≈ TEKS 5.8.A)

c) Demonstrate magnetism. (A.B.M.T.)

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## Science

### Physics (Systems)

#### VOCABULARY

##### Listening/Speaking

attract (atraer)

describe (describir)

direction (dirección)

ear (oído)

energy (energía)

feel (sensación)

force (fuerza)

gently (suavemente)

gravity (gravedad)

hand (mano)

hear (oír)

inclined plane (plano

inclinado)

interact (interactuar)

magnet (imán)

magnetic (magnético)

magnetic field (campo

magnético)

measure (medir)

motion (movimiento)  
nonmagnetic (no magnético)  
observe (observar)  
parts (partes)  
position (posición)  
pull (jalar)  
push (empujar)  
record (apuntar)  
separate (separado)  
sound (sonido)  
sound energy (energía del sonido)  
system (sistema)  
whole (entero)  
vibrate (vibrar)  
vibration (vibración)  
voice (voz)  
vocal cords (cuerdas vocales)

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## Science

### Chemistry (Reactions of Matter/Properties, Patterns, and Models)

#### Benchmarks 4-6

The student will:

#### 4. Matter and Energy

a) Define matter as solid, liquid, or gas; define energy as the ability to do work.

(A.B.M.T.)

b) Recognize and copy patterns seen in charts and graphs. (TEKS K.5.C / ≈ TEKS 4.6.A)

#### 5. Physical and Chemical Properties

a) Describe properties of objects. (TEKS K.5.A)

b) Observe, describe, and record changes in size, mass, color, quantity, temperature, and sound. (TEKS K.7.A / ≈ TEKS 5.7.A)

c) Classify matter based on its physical properties including state of matter. (≈ TEKS 5.7.A)

#### 6. Physical and Chemical Changes

a) Identify that heat causes change, such as ice melting or the Sun warming the air and compare objects according to temperature. (TEKS K.7.B / ≈ TEKS 5.7.D)

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## Science

### Chemistry (Reactions of Matter/Properties, Patterns, and Models)

#### VOCABULARY

#### Listening/Speaking

amount (cantidad)  
appearance (aspecto)  
classify (clasificar)  
color (color)  
describe (describir)  
different (diferente)  
gas (el gas)  
heat (calor)  
heavy (pesoso)  
light (ligero)  
liquid (líquido)  
mass  
matter (materia)  
observe (observar)  
physical properties  
(propiedades físicas)  
record (apuntar)  
shape (forma)  
size (el tamaño)  
solid (sólido)  
sort (clasificar)  
state (or phase) of matter  
(estado / fase de materia)  
temperature (la  
temperatura)  
weight (el peso)

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## Science

### Earth Space (Constancy and Change)

#### Benchmarks 7-9

The student will:

#### 7. Earth Materials

a) Observe and describe properties of rocks, soil, water and ways that they are useful.  
(TEKS K.10.A.B / ≈ TEKS 3.11.A / ≈ TEKS 4.11.A)

#### 8. Earth Cycles

a) Recognize and copy patterns seen in charts and graphs. (TEKS K.5.C)  
b) Observe and identify patterns including seasons, growth, day and night; predict what happens next. (TEKS K.5.B / ≈ TEKS 4.6.A / ≈ TEKS 5.6.A)

c) Observe and record weather changes from day to day and over seasons. (TEKS K.7.C /  
≈  
TEKS 4.6.A / ≈ TEKS 5.6.A)

### **9. Objects in the Sky**

a) Observe and identify patterns of change in the night sky. (TEKS K.5.B / ≈ TEKS 4.6.A /  
≈ TEKS 5.6.A)

b) Identify the planets in the solar system and their position in relation to the sun. (\*  
TEKS  
3.11.C)

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## **Science**

### **Earth Space (Constancy and Change)**

#### **VOCABULARY**

##### **Listening/Speaking**

air (aire)

banded (rayado)

cloud (nube)

coarse (grueso)

cold (frío)

color (color)

cool (fresco)

crescent moon (see note  
below)

crystal (cristal)

day (día)

describe (describir)

Earth (Tierra)

fall (otoño)

fine (fino)

full moon (luna llena)

gibbous (giboso)

grain (grano)

half moon

hot (caliente)

inner planets (planetas  
interiores)

Jupiter (Júpiter)

Mars (Marte)

Mercury (Mercurio)

moon (luna)

Neptune (Neptuno)

new moon (luna nueva)

night (noche)

observe (observar)

organic matter (material

organico)  
outer planet (planetas  
exteriores)  
pattern (modelo)  
planet (planeta)  
Pluto (Plutón)  
Saturn (Saturno)  
precipitation (precipitación )  
rain (lluvia)  
record (apuntar)  
rock (piedra)  
sand (arena)  
season (estación)  
snow (nieve)  
soil – (tierra)  
spring (primavera)  
summer (verano)  
sun (sol)  
temperature (temperatura)  
topsoil – (la capa superficial  
del suelo)  
Uranus (Urano)  
Venus (Venus)  
waning (disminuyendo)  
warm (calido)  
water vapor (vapor de agua )  
waxing (creciendo)  
weather (tiempo)  
wind (viento)  
winter (invierno)

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## Science

### Life (Habitats and Beyond; Form and Function)

#### Benchmarks 10-12

The student will:

#### 10. Living/Nonliving

- a) Identify and group organisms or objects as living or nonliving. (TEKS K.8.A.B)
- b) Observe and record stages in the life cycle of organisms in their natural environment, such as in a garden. (TEKS K.7.D / ≈ TEKS 5.6.C)
- c) Observe and describe habitats of organisms within an ecosystem. (\* TEKS 3.8.A)
- d) Recognize and copy patterns seen in charts and graphs. (TEKS K.5.C)

#### 11. Needs of Organisms

- a) Identify basic needs of living organisms. (TEKS K.9.A / ≈ TEKS 2.9.A)
- b) Give examples of how living organisms depend on each other. (TEKS K.9.B / ≈ TEKS 2.9.B)

- c) Identify ways that the Earth can provide resources for life. (TEKS K.9.C)
- d) Describe how living organisms, such as a caterpillar, modify their physical environments

to meet their needs. (\* TEKS 3.8.D)

## **12. Adaptations, Genetics, Stimuli**

- a) Describe characteristics of organisms. (TEKS K.5.A)
- b) Sort organisms into groups according to their parts and describe how the groups are formed. (TEKS K.6.A / ≈ TEKS 5.5.A.B)
- c) Record observations about parts of plants including roots, stems, leaves and flowers. (TEKS K.6.B) Record observations about parts of animals including wings, feet, heads and tails. (TEKS K.6.C / ≈ TEKS 5.5.A.B)
- d) Identify parts of a system, that when separated from the whole, may result in the part or the whole not working, such as plants without leaves. (TEKS K.6.D / ≈ TEKS 5.5.A.B)

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## **Science**

### **Life (Habitats and Beyond; Form and Function)**

#### **VOCABULARY**

##### **Listening/Speaking**

adult (adulto)  
animal (animal)  
butterfly (mariposa)  
caterpillar (oruga)  
characteristic  
(característico)  
cotyledon (cotiledón)  
depend on (depende de)  
earth (la tierra)  
egg (huevo)  
energy (energía)  
flower (flor)  
food (comida)  
food chain  
(encadenamiento de  
alimento)  
food web (red alimenticia)  
grow (crecer)  
habitat (el habitat)  
hilum: (hilo)  
hypocotyl (hipocótilo)  
larva (larva)  
leaf (hoja)  
life (la vida)  
living (vivo) –

mature (maduro)  
metabolism (metabolismo)  
metamorphosis  
(metamorfosis)  
micropyle (micropilo)  
move (mover)  
nonliving (no vivo)  
observe (observar)  
organism (organismo)  
plant (planta)  
plumule/epicotyl (la  
plúmula)  
pupa (crisálida)  
radicle (radículo)  
record (apuntar)  
reproduce (reproducir)  
resource (recurso)  
respond (responder)  
roots (raíces, raíz  
[singular])  
seed (semilla)  
senses (sensorio)  
seed coat (la capa de la  
semilla)  
stem (tallo)