TEKS in Focus highlights key concepts and student expectations to assist educators in implementing the science Texas Essential Knowledge and Skills (TEKS). The vertical progression of a concept within the science TEKS is provided along with a side-by-side view of the changes implemented in 2024.

Focus: Vertical Alignment of Mixtures
Elementary School

Level of Study	Prior Science TEKS	TEKS Implemented in 2024
Grade 2	2.5.D **combine materials that when put together** can **do things that they cannot do by themselves such as building a tower or a bridge** and **justify the selection of those** materials based on their physical properties.	2.6.C **demonstrate that small units such as building blocks** can **be combined or reassembled to form new objects for different purposes** and **explain** the materials **chosen** based on their physical properties.
Grade 3	**3.5.D explore and recognize that a mixture is created when two** materials **are** combined **such as gravel and sand or metal and plastic paper clips.**	3.6.D **demonstrate that** materials **can be** combined **based on their physical properties to create or modify objects** such as building a tower **or adding clay to sand to make a stronger brick** and justify the selection of materials based on their physical properties.
Grade 4	4.5.B compare **and contrast** a variety of mixtures, including solutions; ----------	4.6.B **investigate** and compare a variety of mixtures, including solutions **that are composed of liquids in liquids and solids in liquids**; and **4.6.C demonstrate that matter is conserved when mixtures such as soil and water or oil and water are formed.**
Grade 5	5.5.B demonstrate that some mixtures maintain physical properties of their **ingredients** such as iron filings and sand **and** sand and water; 5.5.C i**dentify changes that can occur in the physical** properties of the i**ngredients of** solutions **such as dissolving salt in water or adding lemon juice to water;**	5.6.B demonstrate **and explain** that some mixtures maintain physical properties of their **substances** such as iron filings and sand **or** sand and water; 5.6.C **compare the** properties of **substances before and after they are combined into a** solution **and demonstrate that matter is conserved in solutions**; and

Key Changes in Mixtures: Elementary

- **Grade 3:** Justification of material selection was added.
- **Grades 3–4:** The formal introduction of mixtures moved from grade 3 to grade 4.
- **Grades 4–5:** The conservation of matter in the process of making mixtures and solutions is new to both grades.
- The term substance is new to elementary student expectations.

Focus: Vertical Alignment of Mixtures

Middle School

Level of Study	Prior Science TEKS	TEKS Implemented in 2024
Grade 6	6.5.A **know that an element is a** pure substance **represented by a chemical symbol and that a compound is** a pure substance **represented by a chemical formula**;	6.6.B **investigate the physical properties of matter to distinguish between** pure substances, **homogeneous mixtures (solutions), and heterogeneous mixtures;**
Grade 7	----------	**7.6.D describe aqueous solutions in terms of solute and solvent, concentration, and dilution; and** **7.6.E investigate and model how temperature, surface area, and agitation affect the rate of dissolution of solid solutes in aqueous solutions.**
Grade 8	----------	**8.6.A explain by modeling how matter is classified as elements, compounds, homogeneous mixtures, or heterogeneous mixtures;**

Key Changes in Mixtures: Middle School

- **Grades 6–7:** Elements and compounds were removed from grade 6 and added to grade 7 (7.6.A).
- **Grade 6 and 8:** In grade 6, students distinguish between pure substances and types of mixtures. In grade 8, students also distinguish between types of substances.
- **Grade 7:** The focus of the matter and energy strand shifted from life science to physical science.
- **Grade 7:** Aqueous solutions and solubility are new.

Focus: Vertical Alignment of Mixtures

High School

Level of Study	Prior Science TEKS	TEKS Implemented in 2024
Chemistry	Chem.10.A describe the unique role of water in solutions in terms of polarity;	Chem.11.A describe the unique role of water in solutions in terms of polarity;
	Chem.10.E distinguish among types of solutions such as electrolytes and nonelectrolytes; unsaturated, saturated, and supersaturated solutions; **and strong and weak acids and bases**;	Chem.11.B distinguish among types of solutions, including electrolytes and nonelectrolytes and unsaturated, saturated, and supersaturated solutions;
	Chem.10.F investigate **factors that** influence solid and gas solubilities and rates of dissolution such as temperature, agitation, and surface area;	Chem.11.C investigate **how** solid and gas solubilities are influenced by temperature **using solubility curves and how** rates of dissolution are influenced by temperature, agitation, and surface area;
	Chem.10.B **apply** the general rules regarding solubility **through investigations with aqueous solutions**;	Chem.11.D **investigate** the general rules regarding solubility and **predict the solubility of the products of a double replacement reaction**;
	Chem.10.C calculate the concentration of solutions in units of molarity;	Chem.11E calculate the concentration of solutions in units of molarity; and
	Chem.10.D calculate the dilutions of solutions using molarity;	Chem.11.F calculate the dilutions of solutions using molarity.
Integrated Physics and Chemistry (IPC)	**IPC.6.E relate the structure of water to its function as a solvent; and**	----------
	IPC.6.F investigate **the properties of water solutions and** factors **affecting solid solubility, including nature of solute,** temperature, and concentration	IPC.7.F **plan and conduct an** investigation **to provide evidence that the rate of reaction or dissolving is affected by multiple** factors **such as particle size, stirring,** temperature, and concentration**.**

Key Changes in Mixtures: High School

- The study of the structure of water was removed from IPC.
- The factors affecting the rate of reaction are new to IPC.
- In IPC, students now explore factors that affect the solubility of gases and liquids in addition to solids.

TEKS in Focus spotlights concepts or student expectations monthly to bolster TEKS alignment, rigor, and collective understanding. It does not suggest an order or timing but helps with comprehension of TEKS changes, serving as a guide when relevant to classroom instruction.