Sixth Grade Science Scales

Students will be able to use knowledge of Newton's Third Law to solve problems involving the motion of two colliding objects.

4	Student can demonstrate and apply Newton's Third Law to design a solution to a real world problem involving the motion of two colliding objects.
3	Student can use knowledge of Newton's Third Law to solve a problem involving the motion of two colliding objects.
2	Student can use knowledge of Newton's Third Law to solve a problem involving the motion of two colliding objects with help.
1	Student can define Newton's Third Law with help.

Students will be able to independently demonstrate knowledge of an object's change in motion due to forces.

4	Student can independently plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
3	Student can independently demonstrate knowledge of an object's change in motion due to forces.
2	Student can demonstrate knowledge of an object's change in motion due to forces with help.
1	Student can recognize that an object's motion changes due to forces with help.

Students will be able to independently identify factors that affect the strength of electric and magnetic forces.

4	Student can independently identify and demonstrate factors that affect the strength of electric and magnetic forces in real world situations.
3	Student can independently identify factors that affect the strength of electric and magnetic forces.
2	Student can identify factors that affect the strength of electric and magnetic forces with help.
1	Student can define electric and magnetic forces with help.

Students will be able to independently use examples or diagrams to demonstrate and interpret field interaction between objects exerting forces on each other, even though the objects are not in contact.

4	Student can apply the knowledge of eclectic and magnetic fields design solutions in real world situations.
3	Student can independently use examples or diagrams to demonstrate and interpret field interaction between objects exerting forces on each other, even though the objects are not in contact.
2	Student can use examples or diagrams to demonstrate and interpret field interaction between objects exerting forces on each other, even though the objects are not in contact with help.
1	Students can define electric and magnetic fields.

Students will be able to independently use evidence to support the claim that gravitational interaction between objects are attractive and depend on the masses of interacting objects.

4	Student can construct and present arguments using evidence to support the claim that gravitational interactions between objects are attractive and depend on the masses of interacting objects in real world situations.
3	Student can independently use evidence to support the claim that gravitational interactions between objects are attractive and depend on the masses of interacting objects.
2	Student can independently use evidence to support the claim that gravitational interactions between objects are attractive and depend on the masses of interacting objects with help.
1	Student can define gravitational interactions with help.

Students will be able to construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6 billion-year-old history.

4	Student can independently construct a scientific explanation based on their evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6 billion-year-old history in real life examples.
3	Student can independently apply the geologic scale to organize Earth's history.
2	Student can apply the geologic scale to organize Earth's history with help.
1	Student can define geologic time scale.

Students will be able to independently explain geoscience processes and how they have changed Earth's surfaces.

4	Student can construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales in real life examples and situations.
3	Student can independently explain geoscience processes and how they have changed Earth's surfaces
2	Student can explain geoscience processes and how they have changed Earth's surfaces, with help.
1	Student can define geoscience processes.

Students will be able to independently explain that the distribution of fossils and rocks, continental shapes, and seafloor structures is related to past plate motions.

4	Student can analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions in real life examples and situations.
3	Student can independently explain that the distribution of fossils and rocks, continental shapes, and seafloor structures is related to past plate motions.
2	Student can explain that the distribution of fossils and rocks, continental shapes, and seafloor structures is related to past plate motions, with help.
1	Student can define plate tectonics.

Students will be able to independently identify patterns in fossil records and recognize changes of life forms throughout Earth's history.

4	Student can independently analyze and interpret data from patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past and apply this to real life examples and situations.
3	Student can independently identify patterns in fossil records and recognize changes of life forms throughout Earth's history.
2	Student can identify patterns in fossil records and recognize changes of life forms throughout Earth's history with help.
1	Student can identify patterns in fossil records with help.

Students will be able to independently identify anatomical similarities and differences between past and modern organisms and apply this knowledge to evolutionary relationships.

4	Student can apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships in real life examples and situations.
3	Student can independently identify anatomical similarities and differences between past and modern organisms and apply this knowledge to evolutionary relationships.
2	Student can identify anatomical similarities and differences between past and modern organisms and apply this knowledge to evolutionary relationships with help.
1	Student can identify anatomical similarities or differences among past and modern organisms.

These are end of the year 6th grade science goals