Colorado Columbine *(Aquilegia caerulea)*  Aren't I lovely? I'm the Colorado state flower for a reason- my flowers are stunning. Don't let my looks deceive you though, I know how to protect myself from predation. All parts of me are poisonous, containing toxins that will hurt the heart and digestive tract; so animals know to stay clear.	Mullein *(Verbascum thapsus)*  See all that fuzz on my leaves? It feels soft to the touch but this dense, wool-like hair is not appetizing to livestock like deer and elk and it can be quite irritating to sensitive skin; so predators do not like to eat them. My seeds are protected as well, being toxic to herbivores. Historically, people have found my seeds rather useful for fishing. They would put them into the waters of a fishing spot to intoxicate the fish, making them easier to catch. If a predator does eat my flower/seed heads, watch out! I will make even more branches and a greater amount of seeds to compensate!
Curlycup Gumweed (*Grindelia squarrosa)*	White Sweet Clover ***(Melilotus officinalis)***

I make sure that I'm not palatable to grazing animals like horses, cattle, and sheep by defending my leaves with unpleasant-tasting chemicals like tannins, volatile oils, resins, bitter alkaloids, and glucosides. Unfortunately, sage grouse chicks love to eat me anyway!

I look pretty tasty to cattle and sheep so I had to evolve a chemical defense. My leaves and flowers contain a bitter chemical called coumarin, that not only tastes bad but also transforms into poison when I become moldy.

Big Root Prickly Pear *(Opuntia macrorhiza)*

See the long, sharp spines on my green flesh? I have modified my leaves to be sharp in order to deter larger herbivores like deer and elk from feeding on me. Unfortunately, smaller predators like insects can make their way around my spines and eat me if they wish.

Silvery Lupine *(Lupinus argenteus)*

I have mastered my protective defenses by ensuring that all parts of me (my fruits, seeds, leaves, and all other parts) are poisonous. Grazing animals know not to eat me in order to stay safe.

Woods Rose (***Rosa blanda***)

Yucca (***Yucca glauca***)

 Like all rose family members, I have thorns and bristles on my stems to keep predators at bay. My precious fruit (rose hips) also contain cyanide-like compounds, a dangerous chemical to animals, which keeps them from eating them.	 I have coevolved with the yucca moth to form a mutually beneficial relationship in which the moth larvae feed on some (but not all) of my seeds and use my seed pods as shelter. In exchange, adult moths serve as my pollinator, allowing me to pass my genes on to the next generation.

Figure 2. The botany cards above provide information about the defenses of common Colorado plants. They will be distributed to the participants/students (children and their guardians) to read to the group as they encounter the respective plants on the educational hike.

Spines, Thorns, or Prickles	Trichomes (layer of plant hairs)	Rigid Leaves or Stems
Sharp, Microscopic Particles in leaves or stems	**Protective Plant Bingo** **Bonus Space** *Locate a **new** plant that has a defense*	Reduced Visibility

Chemical Defenses	Architecture	Overcompensation

Figure 3. Protective Plant Bingo Cards. These will be distributed to the children as a formative assessment to gauge their understanding of the learning objectives.