**Mixture Separation Challenge - Teacher Guide**

**Ingredients**

* Iron filings, Educational Innovations, 1 pound container, #M-600, $5.95
* Salt
* Pebbles
* Sequins
* Colored Sand
* Magnets (ceramic), [Amazon](https://www.amazon.com/Ceramic-Thickness-Projects-whiteboards-Organization/dp/B07SKYWLPC/ref=asc_df_B07SKYWLPC/?tag=hyprod-20&linkCode=df0&hvadid=380300577105&hvpos=&hvnetw=g&hvrand=13628306360202596512&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9008493&hvtargid=pla-817816504014&psc=1&tag=&ref=&adgrpid=77147462869&hvpone=&hvptwo=&hvadid=380300577105&hvpos=&hvnetw=g&hvrand=13628306360202596512&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9008493&hvtargid=pla-817816504014), $12.95/120 magnets
* Metal strainer/sifter, Dollar Tree
* Tweezers, [Amazon](https://www.amazon.com/Tweezers-Plastic-Disposable-Dressing-Elementary/dp/B09HZ8C6FH/ref=sr_1_2_sspa?crid=2RQ63FZHH9THH&keywords=plastic+tweezers&qid=1656696156&sprefix=plastic+tweezers%2Caps%2C106&sr=8-2-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUEzTTNLVzQ5NU1JV0lHJmVuY3J5cHRlZElkPUEwNDA2MTg4MkpVU05PWlg1NkxaSyZlbmNyeXB0ZWRBZElkPUExMDE5MjgzMVI1UzNLNFgzQkJKTyZ3aWRnZXROYW1lPXNwX2F0ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=)
* Coffee Filters
* Cups

**Preparation**

* Create a mixture of iron filings, pebbles, sequins, and colored sand. The ratio of each substance is not important. There should be enough for each group to use approximately 5-10 grams. **DO NOT** initially tell the students what is in the mixture.

**Implementation**

1. Have the students Explain the purpose of the experiment.
2. Then they will draw/illustrate a picture of the UFS (mixture)
3. You will guide the students with the research portion of the worksheet
4. For Procedures:
   1. You as the teacher can help guide the students on what procedures you want them to follow or
   2. The students can come up with their own procedures and you will sign off their procedures.
5. Once they have separated the mixture, they will answer the questions on the back of the student paper.

