



Station 3 of Carousel

**This would be a one hour lesson but for the purpose of the workshop it will be adjusted to a 20 minute experience for participants.*

Lesson title: Case study of development of a new variety of grass or clover.

Key skills used: Communicating, being personally effective, working with others, information processing and creative and critical thinking.

Cross cutting themes considered:

Technology, breeding and genetics and food production.

Learning Outcomes:

1.1 (c), 1.4 (c), 3.1 (b), 3.3.2 (f), 3.3.2 (j)

Rationale:

This activity is based on Teagasc Research Insights, Webinar 18 - Role of grass breeding and evaluation to increase the sustainability of pasture-based systems. First uploaded on, 12/05/2021. It is available to watch at <https://www.teagasc.ie/about/research--innovation/teagasc-research-insights-webinars/advancements-in-grassland-management-webinars/#grass3>

Participants will be provided with the attached information sheets in relation to genetic advancements in forage development. Participants will be required to read the information provided individually and then have a group discussion in relation to advancements between 1980 and 2017.

They will then be asked to complete the following task.

Task:

1. Compare plant breeding and genomic selection using a venn diagram.
2. In light of the above technique taking seven years to go from seed to seed, in your group explain how genomic selection could speed up the process from seed to seed time to one year.
3. Justify the use of genomic selection in plant breeding.
4. By using genetic tools we have reduced the seed to seed time from seven years to one year. Discuss a genetic tool which might reduce this time to weeks?
5. Discuss what the future of forage development looks like through the lens of the Cross Cutting Themes?