

Suggestions for use of the Gallery Portraits

Portraits provide important information about the microbial stars (and their components, activities and related issues) that feature in the Topic Frameworks. They are ideally suited for

Reading:

- In class or at home
- Homework

Discussion/presentation

- Class discussions (e.g. *why is Alca so important for us/the oceans? Of the SDGs impacted by our MicroStar, which one(s) is(are) the most important and why?*)
- Student presentations in class

Writing

- Summarizing, comparing, assessing

Researching-projects

- Individual and class research projects: knowledge deepening-expansion through web-based research (e.g. *Which other microbes do a similar job? How does the MicroStar interact with other organisms with which it shares its natural habitat? Which conditions favour the MicroStar and why? A day in the life of...Etc.*)
- Create a MicroStars montage – keeping it ecologically accurate, e.g. which microbes would be found in the same environment, or base it around a theme e.g. bioremediation
- Is/was there a local culturally or economically important activity in your region in which microbes play/ed a role (e.g. mining, brewery, food production/processing, etc.)? Create a Portrait of the main organism linking it to the local activity.
- Class presentations of findings as individuals and groups

Class competitions-debates

- Between student/between group competitions in class (e.g. *which is the better cell factory: E. coli or P. putida, and why?*)
- TV/Social media: spot news items where you think a MicroStar was involved but did not necessarily get a mention (e.g. oil spill, food-poisoning outbreak, sewage treatment or lack thereof)

Creative arts

- Which MicroStars are for you the most fascinating? The most happy? The most sad? The most clever? The most hard working? The most lazy? The most selfish? The most cruel? The most helpful? The most environmentally friendly? Etc? Try different means of enhancing their 'personalities': drawing, writing, painting, etc.
- Imagine and draw a situation involving your MicroStar
- Develop a short story about your MicroStar – could be plausible or fantasy

- Make a short video (2-3 min) about your MicroStar - develop a short dialogue script and staging instructions. Decide at the outset what the key message of the video will be and make sure it is delivered.
- Create a short comic about your MicroStar – plausible or fantasy
- Create a short scene of a play about your MicroStar (serious, funny, fantasy, etc.), Combine with scenes created by others to make a play; perform the play in class....
- Write a song – any style - about your MicroStar; perform in class....
- Create a dance based on your MicroStar; perform in class...
- Design a game (top trumps or board game)

Home, family and friends

- Out and about: select one or more MicroStars that you know are doing things in your neighbourhood (lichens/microalgae/fungi on various surfaces; nodule-forming nitrogen fixer on plant roots; methane forming archaea in stagnant ponds; denitrifier on farmland receiving fertiliser; corrosion-producing microbe on steel pipes and concrete reinforcement; etc.), take your family/friends on a walk to show them, and tell them the story
- Create a size chart from the smallest to the largest cells of the MicroStars, illustrating with the most beautiful or dramatic Stars, show to family and friends and explain why the Stars are famous

NB: 1. Some of the suggestions provided above are obviously age-dependent

- 2. Some of the suggestions may be also adopted as activities/preparatory activities by the teacher (e.g. development of songs, theatre, etc.)*
- 3. Although there is a clear organizational change in the transition from secondary to tertiary education, in reality the abilities and interests evolve seamlessly between the two groups, so some of the materials-exercises developed for pre-university students will be useful for undergraduates (e.g. research exercises; creation of videos, etc.).*