REFLECT

Students and the teacher record, post and share audio-visual reflections and feedback of project progress, challenges and future steps. The students slowly build a shared collection of ways to tackle challenges, which can be used after the project ended. Classroom time: Approximately 10 minutes

Ideas for using technology:
- **functionalities: 1. audio/video reflection.**
- **tools:** TeamUp, ReFlex, Redpentool, Voicethread

You may look forward to...
- reviewing team progress quickly and comfortably at any time and anywhere
- providing personal feedback to teams
- a more fair distribution of support beyond the classroom
- spending less time recording feedback for students
- providing students with personal feedback through gestures, tone of voice, background information (your home, garden etc.)
- using the recordings to better communicate with parents about school activities
- developing a collection of comments to your students
- building a resource of reflections made by students
- using novel tools
- develop technical, organizational and pedagogical competences
- acquire a repertoire of using reflection for multiple purposes

Your students may learn...
- to summarize, communicate, present and plan their work in progress at anytime and anywhere
- to reflect on their work
- to provide and receive criticism

1. Prepare / Listen
- Develop your competence and expertise, by exploring how often and by whom reflection and feedback could be used in the learning story and by decide on the reflection tool that you would like to set up and use.
- Before recording another feedback or reflection listen to the previous one.

2. Inspire
- Motivate the students to reflect on their work by expressing the benefits and reasons for reflection, for example easier review of the last steps, catching up after an absence, receiving direct feedback from the teacher.
- Tell your students that in design related learning projects, regular reflection can support letting go of initial, not very good, ideas and to develop the feeling of ownership.

3. Coach / Question / Support

- Teams reflect on what they did, what they plan to do and the challenges they encountered or can foresee.
- The first reflections may be difficult to record smoothly. Coach students to overcome initial feelings of frustration or inconvenience. Be assured, after recording a few reflections, you will start to recognize the value of your investment.
- Teams listen to the recordings by others and record questions and tips for them. Coach and support them in doing so.
- Listen to the recordings and adopt your teaching to the needs of the students.
- Record audio-visual feedback for the teams, including questions and suggestions that may inspire the teams to think further, based on the student reflections.
- Experts may be invited to record feedback to the student teams. Their feedback is may become ubiquitous, and a source of inspiration for the students in the years to come.

4. Assess

- You may assess based on the student's ability to listen and react to your constructive comments, or based on the depth or relevance of their reflections.

* * * For abridged stories that ends after the first reflection activity * * *
Assess

- Review all work. Compare everyone's progress updates with their presentations to see if all important steps are included in the presentation.
- Review all reflection recordings and discuss the process with the students. What was their experience like? What have they learned? What would they like to explore further?
- Student work can be used for open feedback and reflection sessions.
- You could assess the documentations for their value as resources for exam preparation.

MAKE

Based on their refined design brief and design ideas, student teams start making. They create their first prototype, and discuss it afterwards. The discussion especially relates to how well the design address the identified design challenges. They then record a reflection and document their activities. Careful guidance through the learning activities and the process of creation is indispensable for students to keep their minds on learning potential curricular requirements. Highlight the reflection after this activity and ensure that everyone focuses on addressing the needs of an audience. To avoid free-riders or unequal workload division, carefully divide tasks and roles within teams. Classroom time: Approximately 2 lesson(s)

Ideas for using technology
- **functionalities: 2. media editing, diy kit, programming environment, construction kit, 3d editing, 3d printing**
- **Tools:** Prezi, Sketchup, Scratch, TeamUp, ReFlex, iTEC Widget Store

You may look forward to...
- inspiring students to be creative and imaginative in their use of digital technology
- stepping beyond your comfort zone and guiding students to do the same
- seeing different projects emerge from the same initial assignment
- using novel tools

Your students may learn to...
- transform their ideas into concrete prototypes
- identify new ways of addressing challenges
- do paper prototyping
- use digital authoring tools
- it is rewarding for students to complete a project.

1. Prepare / Listen
- Listen carefully to the student comments, and shape the activity according to their needs and interests.
- Expand your competence and expertise by preparing the material, software and technology needed for making.