

SMART IMPLEMENTATION

IDEAS FOR iTEC CYCLE 4

LEARNING ACTIVITIES

CYCLE 4 LEARNING ACTIVITIES AND SMART SOLUTIONS SUGGESTED

LEARNING ACTIVITY	SMART SOLUTION	OTHER TOOLS
<p>1. DREAM</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 • XC AddOn* • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange: Templates iTEC Cycle 4: 1. Dream 	<ul style="list-style-type: none"> • Student devices and Internet connection • TeamUp, ReFlex • Google Sites, Blogger, Corkboard.me • Google drive, dropbox,...
<p>2. EXPLORE:</p> <p>OBSERVATION (LS Creating an object)</p> <p>BENCHMARK (LS Creating a story or Creating a game)</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 • XC AddOn* • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange: Templates iTEC Cycle 4: 2. Explore • SMART Idea Cards Widget • SMART Notebook Spotlight tool • SMART Progressive Inquiry Widget 	<ul style="list-style-type: none"> • Student devices and Internet connection • TeamUp, ReFlex • Google Sites, Blogger, Corkboard.me • Google drive, dropbox,... • Media recorder, camera, note taking equipment • Bookmarking, collaborative editing.
<p>3. MAP</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 • XC AddOn* • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange: Templates iTEC Cycle 4: 2. Explore 	<ul style="list-style-type: none"> • Student devices and Internet connection • post-it notes • Bubbl.us, CmapTools, Popplet, Mindmeister, Freemind • TeamUp, ReFlex
<p>4. REFLECT</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 + XC AddOn • SMART Recorder • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange • SMART 6 Thinking Hats Widget • SMART Progressive Inquiry Widget 	<ul style="list-style-type: none"> • Student devices, • Internet connection • TeamUp, ReFlex

Abridged stories will finish here and an Assessment activity will be done at this point

<p>5. MAKE</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 + XC AddOn • SMART Document Camera • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange 	<ul style="list-style-type: none"> • Programming environment • Construction kit, 3d editing, 3d printing, • Sketchup, Scratch, • TeamUp, ReFlex, • iTEC Widget Store
<p>6. ASK</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 + XC AddOn • SMART Recorder • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange • SMART 6 Thinking Hats Widget • SMART Bridgit conference software 	<ul style="list-style-type: none"> • Student devices, • Internet connection • LinkedIn, Skye, , • TeamUp, ReFlex, iTEC Widget Store
<p>7. SHOW</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 + XC AddOn • SMART Recorder • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART Templates in SMART Exchange (ASK templates) • SMART 6 Thinking Hats Widget • SMART Bridgit conference software 	<ul style="list-style-type: none"> • Student devices, • Internet connection • video editing, media recording, video publication • media sharing • iTEC Widget Store • Blogging • iTEC facebook group
<p>8. COLLABORATE</p>	<ul style="list-style-type: none"> • SMART Board • SMART Notebook 11 + XC AddOn • SMART Recorder • SMART Notebook app for iPad / Notebook Interactive Viewer / SMART Notebook for Web • SMART 6 Thinking Hats Widget • SMART Bridgit conference software 	<ul style="list-style-type: none"> • online discussion, media publication, publication. • blogging • iTEC students collaborate facebook group, iTEC teacher community

- [XC AddOn](#)

1. DREAM

Introducing, understanding and questioning a design brief

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)



SMART Templates in [SMART Exchange](#)

Other tools: Student devices, Internet connection, [TeamUp](#), [ReFlex](#), [Google Sites](#), [Blogger](#), [Corkboard.me](#)

*You present a design brief to your class that ties to the curriculum and the local community using the SMART Board, but leaves room for interpretation. You inspire the students by providing them with the motivation for giving their best and by telling them about the ownership and freedom over the task. You present the learning activities process and your schedule, and negotiate the assessment criteria with the class. Students form teams, discuss, question and familiarize themselves with the design brief. The teams refine their design brief, particularly in relation to whom they are designing for, initial design challenges and possible design results. Students record reflections and document their work online. Classroom time: **Approximately 1 lesson***

You may look forward to...

- motivate students by letting them shape their own task
- motivate students by giving them a certain degree of freedom and ownership of their work
- using unfamiliar tools

Your students may learn to...

- seriously commit themselves to thoughtful design
- negotiate on goals and assessment criteria
- question and improve given tasks

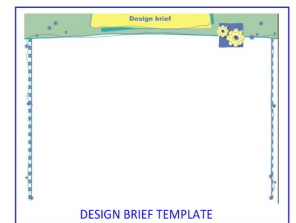
Steps:

1. Prepare / Listen

- Prepare a design brief, by choosing a Learning Story and adjusting it to match curriculum requirements and school schedule.
- Plan and schedule the Learning Activities of the entire design process.
- Through preparation you have the opportunity to expand your competence and expertise, for example, by locating concrete examples that show why it is important to design thoughtful outcomes.

See: <http://bit.ly/design-inspiration>.

- Prepare a Notebook presentation with your ideas and use SMART Notebook Internet Browser to show those examples to the students.
- Prepare an initial list of assessment criteria that reflect the curriculum requirements.



2. Inspire

- Present your design brief, examples, all activities and your schedule to your class.
- Use SMART Notebook to present the activity using the Design Brief Template
- Use Dropbox, Google Drive, email or other to save the template and share it with students that can open it in their own devices using:

- [SMART Notebook app for iPad](#)
- [Notebook Interactive Viewer](#)
- [SMART Notebook for Web](#)
(beta)

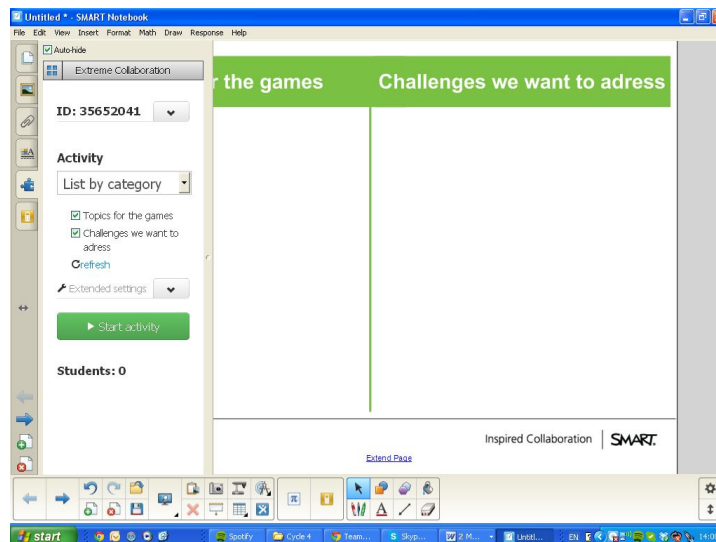
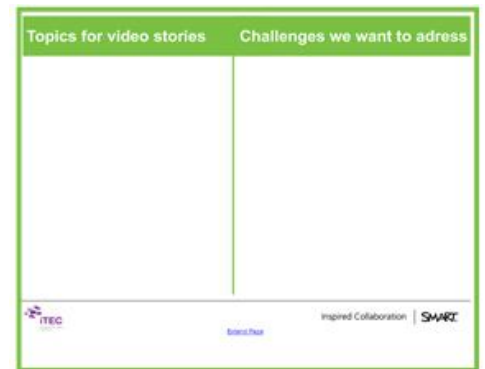


<http://smartnotebook.com/>

- Ensure that everyone is on board by rendering the design brief as a shared goal that relates to the students' personal context.
- Open the Dream template and use XC AddOn to have students sharing their ideas about what they want to design and create and also the challenges they want to address.

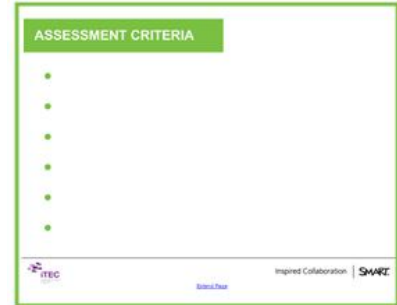


- Open the template Dream Object, Dream Video or Dream Game, depending on the LS that you have selected.
- Then start XC addon in Notebook (Use [How to use XC for iTEC](#) document)



- Select List by category from the Type of activity list, and refresh, so that XC can identify your two categories. Then in the extended settings decide if allow students to select colours, send senders name, etc.

- Then start the activity and collect all student's ideas regarding the briefing.
- Discuss your assessment criteria with the students and agree on them. You can use the Notebook Template. Using XC for this activity you can allow students to send their own ideas about assessment and you can allow them to choose colours in the text to be sent from XC to the boards:
 - Blue colour for positive assessment ideas
 - Red colour for negative assessment ideas.
- Use Team Up to form teams of 4 to 5 students. You may ask the learners to define initial roles.
- You may reach people beyond the classroom by being proactive about your students sharing the design brief with others through the [iTEC facebook group](#) and you can share your experience with other teachers in the [iTEC teacher community](#).



3. Coach / Question / Support

- As the student teams discuss what they will design and how to refine the design brief prompt individual teams with questions that support them to elaborate their choices.
- Encourage students to question your design brief. Ask them open ended questions, such as (a) Who is the design for? (b) How can you find out about the people you are designing for? (c) What challenge are you addressing and how? (d) Who is responsible for what? (e) How would you present your creation process and your design?

- Use SMART Templates and XC to have students adding ideas and collaborating.



- Initial confusion is part of the beauty of design. There is no need to answer all questions right away. You and the students will figure out the answers as you go along.
- Coach the teams to find a specific audience for the designs they plan to create.
- Exercise your educational expertise, and push students beyond their comfort zones, if you notice that the topic is not challenging enough.
- Support the students with examples in case they get stuck.
- Students record a reflection (see reflection activity). Explain that the recordings play an important role in their assessment and in receiving feedback from you, other teams, parents and the people they are designing for.
- Beyond school: Each team sets up a project blog (or comparable service) and send the URL to you and to the iTEC facebook group. On the blog, the teams describe their project and refined design brief. They post initial sketches of what they are planning to design.

4. Assess

- Review the work of each team, their reflection recordings and blog entries, then record audiovisual feedback for them. Your feedback might include suggestions and questions.

- You could assess the students' ability to question the task provided to them, in particular their grounds for introducing changes.
- Use SMART Notebook 11 with its embeddable web browser objects to collect all the student blogs and have them updated in a Notebook document that can be opened every morning to review student's progress.

2. EXPLORE:

A. OBSERVATION

Collecting information in relation to the design brief

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART Idea Cards Widget

Other tools: Student devices, Internet connection [TeamUp](#), [ReFlex](#), [Google Sites](#), [Blogger](#), [Corkboard.me](#), Media recorder, camera, note taking equipment

Student teams explore the context of their design by observing relevant practices or environments using digital cameras, notebooks and microphones. The object of observation depends on who they are designing for, what they are designing and the initial challenges they want to address. They share their collected media files on their blogs, and record a reflection.

Classroom time: Approximately 1-2 lesson(s)

You may look forward to...

- finding dozens of innovative designs from around the world



- using novel tools
- connecting school and students with their community sending them to observe outside of school
- engage students to use all of their senses

Your students may learn...

- find and evaluate designs of various fields
- identify real world design challenges
- question and improve given tasks
- observe and record natural phenomena and/or people
- empathize with others

Steps:

1. Prepare / Listen

- Listen carefully to the student reflections, and shape the activity according to their needs and interests.
- Expand your competence and expertise, by identifying locations and events where observation can be carried out, or people that could be interviewed.

2. Inspire

- Describe the activity to the students and inspire them by showing locations where observations can be carried out.
- Ensure that all teams know what to observe and where.
- Check that each team is equipped with cameras, notebooks, microphones etc.
- If students are using iPads ask them to use SMART Notebook app for ipad to collect their pictures and observations in a Notebook document.



- Use the SMART Idea Cards widget in the SMART Board and in student's devices to guide the observation and following activities.





3. Coach / Question / Support

- Use SMART Progressive Inquiry widget to study problem in research. The learning process aims at answering to the problems presented by the students. The purpose of defining a problem statement is to explicate your learning goals, to explain your research interests and also to introduce the questions that are directing your inquiry. After critically viewing the present working theories and by introducing new deepening knowledge to the discussion, also new subordinate problems can be defined.
- Students perform observations in teams or individually. Coach and support them to find meaningful observations.
- Teams view and annotate their collected media files.
- Students use their own mobile devices to take pictures and record audio/video clips outside the classroom. Bring these into SMART Notebook for later organization.
- Teams plan how much time they want to spend searching, evaluating and comparing. Coach them by remind them about time management.
- Teams search for comparable designs and discuss them. They select the 10 examples that are most relevant to their project. Support them with resources and relevant examples in case they get stuck. Students will use the SMART Templates 2. Explore in their devices (Notebook App or Notebook Viewer) to save the ten examples and share with the rest of the class.
- After the brainstorming they can write down their observation in the Observation Template.

Explore: Benchmarking

Example 1	Example 2	Example 3	Example 4	Example 5
Example 6	Example 7	Example 8	Example 9	Example 10


[Extend Page](#)



- Ask your students to critically assess the activity and their value to school learning. Then, the students record a reflection.
- Beyond school: Teams document their findings, including drawings of design ideas, on their blog. Teams may identify more relevant information, for example by visiting a library or by browsing the Internet.

4. Assess

- Review the work of each team, their reflection recordings and blog entries, then record audiovisual feedback for them. Your feedback might include suggestions and questions.
- You could assess the breadth of identified examples and the teams' ability to observe practices that are related to their design briefs.

2. EXPLORE:

B. BENCHMARK

Collecting information in relation to the design brief

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

SMART Notebook Spotlight tool

[SMART Notebook app for iPad](#) / [Notebook Interactive](#)

[Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART Idea Cards Widget

Other tools: Student devices, Internet connection [TeamUp](#), [ReFlex](#), [Google Sites](#), [Blogger](#), [Corkboard.me](#), Media recorder, camera, note taking equipment

Student teams explore the realm of existing works that relate to their design brief by collecting examples similar to that which they are intending to



design. They share their collected examples on their blogs and record a reflection. You guide their search and support them in the qualification of their material. Note that viewing and qualifying video material can be time consuming. Spending time viewing videos that contain inaccurate information, can be a detour from which a pedagogically meaningful conversation may arise, and may provide students with a first-hand experience about the appearance of an invalid source. Some students, for example younger ones, may need more guidance in performing this activity.

Classroom time: Approximately 1-2 lesson(s)

Steps:

1. Prepare / Listen

- Review your Notebook document with all the students blogs.
- Listen carefully to the student comments, and shape the activity according to their needs and interests.
- Expand your competence and expertise, by identifying online resources for each team. See: 'Design Inspiration for School'

2. Inspire

- Describe the activity to the students and inspire them by showing online resources that they could browse through, use Notebook insert Internet Browser.
- Use Notebook's screenshot tool to capture comparable designs on web pages (provide information about creative comments)
- Ensure that all teams know what kind of examples they are looking for.
- Use document camera to capture original examples of comparable design.



- Let students take pictures in museums (e.g. science museum) or at home and collect the pictures in DropBox (or iTEC Cloud). From there the images and photos can be added to Notebook (drag & drop).
- Let students use spotlight and marker tools to highlight important parts of the design

3. Coach / Question / Support

- Teams plan how much time they want to spend searching, evaluating and comparing. Coach them by remind them about time management.
- Teams search for comparable designs and discuss them. They select the 10 examples that are most relevant to their project. Support them with resources and relevant examples in case they get stuck. Students will use the SMART Templates 2. Explore in their devices (Notebook App or Notebook Viewer) to save the ten examples and share with the rest of the class.

- The learning activities culminate towards a design. Some students may be overwhelmed by the multitude and quality of benchmarked examples and find it difficult to proceed productively. Remind them that many examples they see are made by companies with large budgets.

Explore: Benchmarking

Example 1	Example 2	Example 3	Example 4	Example 5
Example 6	Example 7	Example 8	Example 9	Example 10

iTEC | Extend Base | Inspired Collaboration | SMART

- Slow Internet connection? Try to schedule the use of the Internet for each team to avoid Internet traffic congestion. See if some teams could perform their activity beyond school, using the Internet connection of their homes, after school clubs, or public libraries.
- Teams record a reflection.

- Beyond school: Teams post their findings to their blogs, including drawings of design ideas. Teams may identify more relevant information, for example by visiting a library or by browsing the Internet.
- Teachers found that this activity presents an opportunity for reflecting about the pros and cons of using ICT tools in school. Why not try the same with your students? Ask your students to critically assess the activity and their value to school learning. Then, the students record a reflection.

4. Assess

- Review the work of each team using the Notebook document with the blogs, their reflection recordings and blog entries, then record audiovisual feedback for them. Your feedback might include suggestions and questions.
- You could assess the breadth of identified examples and the teams' ability to identify examples that are related to their design briefs.

3. MAP

Creating a mindmap to understand relations between the collected information

Supported by these technologies:

[SMART Notebook 11](#) + [XC AddOn](#)

SMART Notebook screen capture

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART Idea Cards Widget

Other tools: Student devices, Internet connection post-it notes, Bubbl.us, CmapTools, Popplet, Mindmeister, Freemind, [TeamUp](#), [ReFlex](#)



Teams analyse their findings using mind-mapping techniques. They identify relations, similarities and differences between the examples and/or media files they collected. Based on their collected information and analysis, the teams refine their design brief, especially the design challenges, design results and audience. Then the teams record a reflection. Classroom time: Approximately 1 lesson

You may look forward to...

- hands-on active and visual engagement with collected information and data
- progressive data analysis
- using novel tools

Your students may learn...

- to professionally analyze information collaboratively
- more in-depth understanding about their topic
- to recognize relationships between findings

Steps:

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 exploring how to use Notebook as an interactive mind-mapping tool with XC adding students pictures and text.
- Arrange pens, paper, post-it notes, tape, scissors and glue. Set up the space by arranging walls or large papers for students to group and stick their paper notes on.

2. Inspire

- Engage in a pedagogically meaningful conversation with the students about the data they collected: What did they collect, and how is the information meaningful for their project?
- For easy access, ask the students to move all of their information and data into one location and share it with everyone (dropbox for example)

3. Coach / Question / Support

- Students write all information and data in the form of headlines, short sentences or figures on post-it notes or small pieces of paper, and group their notes.
- Use XC with the different groups and the SMART Notebook Template to collect and organize all the ideas in the SMART Notebook file. They attach their pictures and notes to the Ideas project. Coach them how to best represent some of their findings by drawing the initial notes or making supportive suggestions. Students will use their own devices to collect ideas and send them to the notebook file using XC. Each group will use one template and will take turns to send their ideas to the template, then the members of the group will go to the board to make connections between ideas.



- Support the teams to visually present relationships between the notes when grouping the data, for example, by drawing lines between information, placing notes hierarchically, or other spatial arrangements.
- View and discuss the relations with the students.
- Students will export their SMART Notebook files as images to upload to the blogs.

- Use SMART Templates to ask open ended questions to challenge their assumptions and allow students to participate and collaborate using XC AddOn



- Other ideas that you can add to your questions:
 - what would you like to adopt or try out? What would make your design unique? Does the design brief need refinement? How does it need to be refined? How does the exploration relate to the design? What design decisions would result from the exploration? What are emerging project ideas?
- Teams use the templates using their own devices (Notebook app for Ipad or Notebook Interactive Viewer), and update their design briefs, particularly in relation to design challenges, design results and audience.
- They document their findings on their blog, including sketches of emerging project ideas and record a reflection.
- Students will export the Notebook Document as an image to upload them into their blogs.

4. Assess

- Review the work of each team, their reflection recordings and blog entries (using Notebook Document with all the blogs), to ensure everyone explored and collected examples and/or media files. Then record audiovisual feedback for them. Your feedback might include suggestions and questions about how successful the technique was implemented,

how it could be used for future projects, and how it could be done better next time.

- You could assess the teams' ability to identify design challenges, to draw relationships between observations and examples
- You could also ask the students to grade their teammates' contributions, using the student grades to help form your own assessment.

4. REFLECT

Recording audio-visual reflections and feedback

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

SMART Recorder

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART 6 Thinking Hats Widget

SMART Progressive Inquiry Widget

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 after each session

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

Steps:

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 previous ones.
- Use SMART Recorder to record students' interaction with the content in the SMART Board.

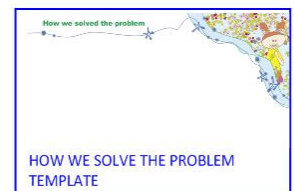


2. Inspire

- Motivate 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.
- Use SMART Progressive Inquiry widget
- 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.
- Students maintain a personal learning diary using SMART Notebook 11
- Into their diary they collect samples of their work by copying from other .notebook files they created or by taking screenshots of other tools they used.
- In SMART Notebook they add notes to explain what they learned and how they grew. They can attach audio recordings to any object they copied in.
- Students can use the How we solve the problem template to reflect about their team work and also use XC to share ideas.
- Students share these with the teacher and their parents via DropBox, SMART Exchange, Moodle or even simple email.
- 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.
- Use SMART 6 Thinking Hats widget to reflect on the designs. Drag and drop the widget into a Notebook page.

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.

5. MAKE

Creating a design

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

SMART Document Camera

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART 6 Thinking Hats Widget

ITEC Widget Viewer

Other tools: Prezi, Sketchup, Scratch, [TeamUp](#), [ReFlex](#), [iTEC Widget Store](#)



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)

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.

Steps:

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.

2. Inspire

- Inspire students to create prototypes that could be used by their audience and that address the identified challenges.
- Team building exercises, such as playing games, solving puzzles or having ice-cream together, can support cooperation and collaboration towards a shared goal.

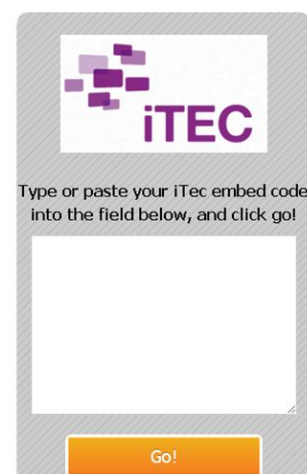
3. Coach / Question / Support

- Teams develop prototypes:
 - Students use the SMART Sketch your design template in the SMART Board, using Notebook app in their iPads or Notebook Interactive Viewer in their computers
 - Other teams will create the sketches using paper and paper models. Then put the sketches under the SMART Document Camera to add them to the Notebook file.
- Export the Notebook file with the sketches into images to be shared in the blogs.
- They then use design software such as Google SketchUp, InDesign, PhotoShop, and others, to develop their ideas. Coach them to address the identified design challenges and to take all collected information into consideration by reminding them of their plans.
- Remind the teams that the activities cumulate towards the creation of an artifact. If you notice teams stalling and debating for too long, step in and support them with hands-on suggestions towards a decision.
- Teams set up their prototypes in the classroom and discuss them with other teams, in particular how and if their prototypes address the identified challenges.
- Teams add the documentation of their design prototype(s) to the blog and describe it, using drawings, videos or digital photographs of their prototypes. Then, they record a reflection.



4. Assess

- Review the work of each team, their reflection recordings and blog entries, to ensure everyone explored and collected examples and/or media files. Students will



export the Notebook file into images to share some examples in their blogs

- Students will use the SMART Recorder to share some of their work.
- Then record audiovisual feedback for them. Your feedback might include suggestions and questions.
- Good prototypes illustrate how a design could be used or how it could work. Prototypes can be rough and unfinished, as long as they help in communication. A simple, yet well thought out concept can be as much of a learning experience as a technically intricate execution. Be careful in your assessment of prototypes.
- You could also ask the students to grade their teammates' contributions, using the student grades to help form your own assessment.

6. ASK

Performing workshops with people who may represent future users of the design

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

SMART Document Camera

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART 6 Thinking Hats Widget

ITEC Widget Viewer

SMART Bridgit client server

Other tools: LinkedIn, Skype; team Up, Reflex.



Teams meet online or face to face with 2–4 people, who could be future users of the prototypes or expert in the subject of the design, and communicate their prototypes and design ideas using prints, drawings or models. These participating people are considered to have an expert understanding of the domain the student designs are framed within. Expertise may be interpreted broadly, for example, a construction site worker can be considered to offer deep insight into the everyday practices of people on a building site. The expert participants are encouraged to use pens and post-it notes to modify and comment on the prototype. After the workshop the students analyze the comments and decide how to interpret them for their re-design. They then refine their design brief, especially in relation to the design challenges, context and added value of the result, record a reflection and update their documentation. This activity can happen more than once at varying time investment. Students can collect feedback on their work by asking outside experts, family members potential future users as well as from other student teams and the teacher.

Classroom time: Approximately 2-3 lesson(s)

You may look forward to...

- let students be in charge of facilitating a workshop
- get to know your students better
- thoroughly consider the appropriate participants for the workshop
- building collaboration with outside experts
- connecting school to other parts of society
- providing students with the opportunity the learners how their personal interests matter
- Taking advantage of the opportunities reality may provide and acting creatively with the context.

Your students may learn to...

- empathize with others and work with different people
- contact experts and ask for collaboration
- present ideas to people who have not followed the project progression
- discuss and negotiate with teachers and experts
- receive criticism and incorporate expert views into their project
- create paper prototypes

Steps:

1. Prepare / Listen

- Listen carefully to the student comments, and shape the activity according to their needs and interests.
- Develop your competence and expertise by using the insights you learned from listening to the reflection recordings for identifying suitable people to ask to comment on the prototypes.
- People working in academia often have a flexible schedule and find it motivating to pass their expert knowledge on to young learners. You may also consider to contact and invite university students.

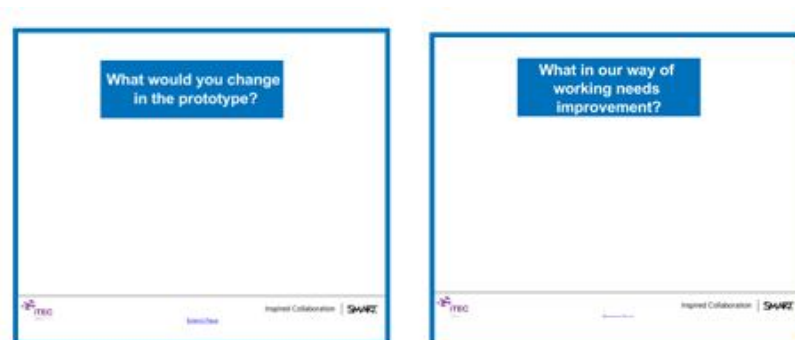
2. Inspire

- Introduce the activity of facilitating a workshop to the students.
- Teams brainstorm possible experts to invite and open ended questions to ask them. In case they cannot think of anyone, make a few suggestions.
- Each team invites 3–4 people to their workshop, could be online or face to face, and arranges a place and time for it. It is important to thoroughly and seriously consider appropriate participants, and to be able to say how each participant can inform the project. The workshops may happen outside of school, for example at the office of a non-governmental organization, an elderly home etc.

- It might be exciting for the students to contact the experts. Practice with the teams how to approach potential participants (Skype, LinkedIn,...).

3. Coach / Question / Support

- Coach the teams by practicing the workshop and providing them with the workshop guidelines of the iTEC project as an example of this activity within a large scale European project. Support students that exhibit difficulties.
- Ensure that each team has access to workshop material (cameras, notebooks, microphone, post-it notes and pens) and their prototype (or a representation of it).
- For online sessions create a SMART Bridgit meeting.
- Students present their design brief and prototype design to the participants and ask for their comments and ideas. The people may alter the prototypes or draw on them to express themselves better. Students take notes and pictures of the activities and the discussion.
- The teams analyse their notes and the drawings of the people. They may use the MAP activity for this and XC to have workshop attendees' opinion. Prompt them with open ended questions and coach them to go beyond the obvious.
- Use all Ask templates along with XC to have attendees in the workshop sharing their ideas about the video/object/game. You will find more than six different templates with questions, but you can ask students to create more Notebook pages with their own questions.



- The teams decide how their prototype and design brief should change based on the analysis.
- The teams record a reflection and document their progress online.

4. Assess

- Review the work of each team, their reflection recordings and blog entries, to ensure everyone is on the right track. Then record audiovisual feedback for them. Your feedback might include suggestions and questions.
- In case the expert followed the progression of the teamwork, their expert view on the learners' performance should be considered. The expert may be involved in defining the assessment criteria. The participants may be asked to record an audio-visual message to the students after redesign their prototypes with the suggestions of the participants in mind.

7. SHOW

Publishing and presenting designs to an audience

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

SMART Document Camera

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)

SMART Templates in [SMART Exchange](#)

SMART 6 Thinking Hats Widget

iTEC Widget Viewer

Other tools: Prezi, Sketchup, Scratch, [TeamUp](#), [ReFlex](#), [iTEC Widget Store](#)

Students create a video with English subtitles presenting their design results and process, as well as learning achievements and possible future steps. They share this documentation with other iTEC students across Europe, their parents and their identified audience to transfer their learning, to communicate the background of their project, to let others know about the possibility to remix their work, and to receive feedback for improvement.

Classroom time: Approximately 1-2 lesson(s)

You may look forward to...

- students stepping into the role of experts
- feedback and reflection sessions between people using the student work as reference
- learning about well performed activities and activities students need to practice more
- illustrating school learning activities to colleagues and parents
- receiving material to inspire future courses and your colleagues
- showcasing prototypes designed by your students

Your students may learn...

- multimedia editing skills
- collaboration on a project
- to prioritize aspects of information
- to document, communicate and summarize learning process, results and the importance of a topic to others
- about the projects, data, and topics others have been working on

Steps:

1. Prepare / Listen

- Develop your competence and expertise by researching the benefits and drawbacks of different forms of documentation, e.g. animation, video etc. and by preparing a presentation for your students. Also get familiar with different video sharing platforms.

2. Inspire

- Inspire the students to create a presentation that documents their learning process and results using a diverse range of media, by pointing out the different ways their project can reach impact this way. Speak

with the students about the production process, planned steps, and requirements.

3. Coach / Question / Support

- Coach the students in choosing a purpose, an audience, and a medium for their presentation
- Teams set up their prototypes in the classroom and demonstrate them to others.
- Individual students or teams create storyboards to plan the narrative of the presentation, and decide which collected files, such as photos, video clips, voice recordings of interviews, geotags, or animations to use to represent their conclusions and process in a meaningful way. Support them by presenting the benefits and drawbacks of different media to students, and discuss speech and performance techniques, as well as ways of convincing an audience.
- Students create a video with English subtitles presenting their design results, and documenting their learning achievements and possible future steps. They upload their video to a video hosting page online and share the link with the [iTEC facebook group](#), their parents and ASK activity participants. Support them by providing sharing platform options. Use Ask templates and XC to have feedback.
- Students and teacher share their blogs and videos with the iTEC community using twitter #itec_eu @SMART_Edu_EMEA
- Additionally, you may organize an informal Maker event, to which parents, ASK activity participants and other students are invited.
- At the end of the pre-pilot, also share the modified design briefs of your students with the [itec community](#), by posting them to the iTEC Participate blog or asking the students to post them there.

4. Assess

- Review all presentations. Compare everyone's progress updates with their presentations to see if all important steps are included in the presentation (see activity 'Reflection').
- Review all reflection recordings and discuss the process from "dream" to "show" 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.

8. COLLABORATE

Forming ad-hoc collaborations with learners of other schools

Supported by these technologies:

SMART Board

[SMART Notebook 11](#) + [XC AddOn](#)

[SMART Notebook app for iPad](#) / [Notebook Interactive Viewer](#) / [SMART Notebook for Web](#)



SMART Bridgit client server

Other tools: LinkedIn, Skype; team Up, Reflex.

Students collaborate with students from other iTEC schools. Ad-hoc and serendipitous collaboration, driven by the students is encouraged.

Classroom time needed: 1 lesson(s)

Steps:

1. Prepare / Listen

- Review the work of each team using you Notebook Document with all the blogs, to ensure everyone is on the right track. Then record

audiovisual feedback for them. Your feedback might include suggestions and questions. Listen carefully to the student comments, and shape the activity according to their needs and interests.

- Expand your competence and expertise by preparing and testing digital tools to use, possibly ask students to demonstrate tools to you.
- Collect examples of how collaboration may look and what it may afford.

2. Inspire

- Inspire students to step out of their comfort zone and to contact students they never met before, by presenting benefits or networking, peer-learning and online collaboration.
- Be mindful of online privacy and safety issues.
- Demonstrate the use of SMART Bridgit to the students to videoconferencing with other students.

3. Coach / Question / Support

- Students search for related work and share their own, they follow and comment on other student's posts.
- Students discuss their experience of participating in the project with students from other classes online.
- Occasionally, videoconferences are set up using SMART Bridgit conferencing software, other times emails are exchanged between the collaborators.
- You coach students to post questions to the channels you set up for them.

4. Assess

- Be open to let personal interests shape your assessment. It may not be the frequency of the students' engagement with others, but rather the depth of their engagement. How apt were the students to utilize the experience of others outside of the classroom?

Table of learning activities

	Telling a Story	Creating an Object	Creating a Game	The Abridged Story
Dream	Storytelling brief	Object design brief	Game design brief	Choose a design brief
Explore	Benchmark: Find and view good videos	Observation: Interview people, take pictures, view reports	Benchmark: Play and analyse good games	Choose a Contextual Inquiry
Map	Mind map the narrative and create a storyboard	Mind map challenges and opportunities, then write them	Mid map of elements and topics to make a game about and create an initial plan	Choose a Mind Map activity
Reflect	Create 1 minute audio recordings	Create 1 minute audio recordings	Create 1 minute audio recordings	Create 1 minute audio recordings
Make	Video production	Object production	Game production	
Reflect	Create 1 minute audio recordings	Create 1 minute audio recordings	Create 1 minute audio recordings	
Ask	same for all	same for all	same for all	
Reflect	Create 1 minute audio recordings	Create 1 minute audio recordings	Create 1 minute audio recordings	
Make again	Video production	Object production	Game production	
Show	Present the videos	Present the objects	Present the games	

Collaborate				
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SMART Widgets in the widget Store

Random Slotmachine:

http://wookie.eun.org/StoreClient/widget_view.html?widgetId=13555

Random Word Notepad:

http://wookie.eun.org/StoreClient/widget_view.html?widgetId=7304

Idea Cards:

http://wookie.eun.org/StoreClient/widget_view.html?widgetId=13556

Six Hats:

http://wookie.eun.org/StoreClient/widget_view.html?widgetId=13557

Progressive Inquiry:

http://wookie.eun.org/StoreClient/widget_view.html?widgetId=13554