Guidelines for Creating a Problem-based Learning

**Role of the Instructor**

- Facilitator-mentor, guide, coach and not a source of solutions
- Resource guide;
- Subject matter expert;
- Create strong problems;
- Learn with students- be open to learning;
- Encourage student participation
- Give students immediate and appropriate feedback

**Role of the Students**

- Take responsibility for their own learning by identifying their learning issues and needs;
- Work in teams;
- Resolve the problem;
- Schedule their own activities, decide how to allocate the time;
- Intuitively take up different roles (e.g. project leader, facilitators, note taker, team member).
Tips for creating strong problems

1. The main characteristics of the best problems are:
   - Unorganized;
   - Unsynthesized;
   - Open-ended;
   - Interdisciplinary;
   - Task oriented,
   - Focus on current events, student lives, actual occurrences;
   - The content is relatable to the previous knowledge of the students.

2. The problems should be created with the following aspects in mind:
   - Introduction (catch the attention, challenge and motivate)
   - Availability of resources
   - Content (appropriate for the student group)
   - Learning objectives (by solving the problems, students should accomplish their learning objectives)
   - Expected outcome
   - Guiding questions (improvisation is key but be prepared with a set of guiding questions)
   - Assessment tasks
   - Reasonable time frame
| Phases of the Problem Solving Process  
<table>
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<tr>
<th>(these are reiterative phases)</th>
<th>Guiding Question</th>
<th>Actions to take</th>
<th>Expected Outcome[s]</th>
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| **Phase 1** | What do we already know? | Explore the problem; 
Connect it to your own experiences; 
Discuss the situation and the problem; 
Draft and agree on working definitions of concepts used; 
Set targets for investigation. | Problem statement (outlet for the investigation, open to revision) |
| **Phase 2** | What do we need to know?  
(in order to solve the problem) | List questions and learning targets; 
Break the problem down into components; 
Create hypotheses; 
List possible solutions. | Formulating Learning Goals (an analysis of what information is needed and how it will be obtained) |
| **Phase 3** | What should we do? | Organize, discuss, assess ideas and hypotheses; 
Find and consult resources, people; 
Assign roles and tasks; 
Analyze and evaluate the new information. | Action- and study plans (determining who will do what, how?) |