

additional ideas.

Once each group has gone through their technique all the students should end up with 7 completed resource sheets turned over, with any additional notes written on.

3. **Carbon sequestration** and **solar radiation** modification are explained to class. Students quickly label or colour code which technique is which on their sheets.
Teacher asks the students to decide how they would choose a technique if they were a government. Students should come up with: cost/ effectiveness, time scale/visual impact/ impact on others, ecosystems etc. – write them on the board
Teacher asks 3 questions the groups have to answer:
- Which they think would be the most expensive
 - Which they think would be most effective
 - If they were a government which one would they choose and why

10mins

Students have couple of minutes to discuss their answers and then each group gives the class their answers.

Following their answers, using the [New Scientist Cost effectiveness diagram](#) (either in printed format or on IWB) the class can be shown how the techniques have been rated and assess their judgements against 'official' ones.

4. *Challenge the concept* [PowerPoint Slide 4]

In their groups students think of at least two questions to which they would want to know the answer to before they were convinced that geo-engineering is a real option. These could include issues that are economic, environmental, political, social, and ethical. Students write these down on paper and place them in the hat (or pile on table). Pick questions out and discuss why the question was raised and consider what the answer might be. The idea is to challenge the concept and understand that it is complex. Reiterate there is no right or wrong answer, and there lies the difficulty.

10mins

Plenary:

[PowerPoint Slide 5, 6 & 7]

Vote with your feet

Pose a number of 'big' questions that students must answer by moving to one side of the room for yes and the other for no or somewhere in between. Students must be prepared to justify their position when challenged.

Questions could include: (change the PowerPoint as appropriate)

- Are the dangers associated with geo-engineering too great?
- Do the consequences of geo-engineering outweigh the threat that continued global warming poses?
- Will geo-engineering save the world?

10mins

Resources

- [Times Climate Change: Ten ways to save the world](#)
- One **blank resource sheet** on each of the seven geo-engineering techniques (**7 sheets in total**)
- **Class set of completed resource sheets** on the seven geo-engineering techniques (one of each for each student with numbers written on the back)
Techniques and their corresponding numbers:
1 = ocean fertilization 4 = sulphur screens 7 = space mirrors
2 = artificial trees 5 = increasing reflectivity
3 = carbon capture storage 6 = increasing cloud reflectivity
- **PowerPoint 'What is geo-engineering?'**
- [New Scientist Cost effectiveness diagram](#)
- [Plan B for Planet Earth - BBC Earthwatch Blog](#)