Ocean Layering: Density, Salinity, Temperature, and Circulation

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Day 4 Overview: Formal Assessment

Warm up & review: 10 min
Quiz: 20 min
Extra Time: 25 min

Warm up & review: Describe how water near the bottom of the ocean moves.
Answers: The water sinks, and rises, and moves very slowly horizontally around the globe. It does not move in circular gyres like the surface, and is not driven by the winds. It moves because of changes in water density.
Leading questions / review questions:

Does water at the bottom of the ocean move?
What causes water at the bottom of the ocean to move?
If I were in a bubble floating near the bottom of the ocean, where would I go? How long would it take me to get there? Would I ever get to the surface?
Where does water sink? Where does water rise?

Quiz:
See '04c.handout.quiz.color' (http://earthref.org/cgi-bin/erda.cgi?n=1024)
or '04c.handout.quiz.gray' (http://earthref.org/cgi-bin/erda.cgi?n=1023)
See '04t.hanout.quiz.answers' (http://earthref.org/cgi-bin/erda.cgi?n=1025)
Goal: assess what students have learned about the vertical circulation of the ocean. This includes the concept of density, where and why water sinks, and application questions.

Extra time:
It is up to the instructor to determine how best to use the rest of the period. A longer review or another activity can be added in before the quiz if desired. The quiz can be combined with assessment questions about the surface circulation for a test on the ocean.