

**I603**

교재로서의 양파 겉껍질

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양파 겉껍질은 흔하여 구하기 쉬울 뿐만 아니라 언제나 재료로 쓸 수 있는 염료이다. 그리고 물들이는 과정도 매우 간단하고 쉽기 때문에 특활시간(70~80분)에 학습교재로 활용하면 편리하다. 게다가 조리과정에서 부산물로 생기는 쓰레기인 겉껍질을 물감의 원료로도 사용할 수 있음을 확인할 수 있기 때문에 사고의 유연성에 대한 학습도 할 수 있다.

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**Improving Student Understanding of Diffusion & Osmosis**

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Students have difficulty in explaining diffusion and osmosis at the molecular level, even though they are often successful at the descriptive level. Molecular movement, the direct cause of diffusion and osmosis, is not observable, and the fact may facilitate students to abduct irrelevant analogies or to resort to teleological explanations. A model of osmosis was developed to visualize the ways in which molecular events take place. After shaking the model earnestly for several times, students can see the change of the level at the both sides separated by screen. This activity provides them with opportunities to predict, observe and explain the change of the level. A study with two groups, one as expository group and the other as mechanical model group, showed that using the model significantly improved student understanding of osmosis at the molecular level. These preliminary results may be generalized by further research investigating students' use of the model in verbally explaining the molecular basis for osmosis and transfer of the knowledge gained using the model to explain osmosis to other phenomenon involving diffusion.