Heat Transfer Kitchen Activity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| General appearance and observations  (Estimated temperature, color, consistency, etc.) | | | | |
|  | Shell | White | Yolk | Other comments |
| **Boiled** | | | | |
| 5 min |  |  |  |  |
| 10 min |  |  |  |  |
| 15 min |  |  |  |  |
| **Baked** | | | | |
| 5 min |  |  |  |  |
| 10 min |  |  |  |  |
| 15 min |  |  |  |  |

**Questions:**

1. Heat transfer in this activity is both external, from the water or air to the egg, and internal, from the outside of the egg towards the yolk. Which method is best at transferring heat from the fluid to the eggshell? Compare the temperature gradients you observed in the two methods. Which of the methods produces the most pronounced gradient?  Which of the methods is likely to produce the most consistent hard cooked egg?
2. Both of the cooking methods used here are based on convection but there are some differences (beyond the obvious fact that one is wet and one is dry!). Explain what those differences are and why one heat transfer method might be favorable to the other for cooking eggs.