

## WHY FORMATIVE ASSESSMENT?

Formative assessment, until recently largely overlooked, has come into its own, and great strides have been made in its design and delivery (Furtak, 2009). The power of formative assessment lies in its ability to reveal student thinking in a way that offers teachers opportunities for midcourse corrections. Summative assessments, which are designed to evaluate students' grasp of domain-specific content, do not always help teachers recognize to what degree students understand material. Under typical summative assessment procedures, students receive feedback at the end of a learning cycle, leaving no opportunity to revisit material and no time to make instructional changes. In formative assessment, feedback keeps the learning going; it informs the next step. So summative assessments are assessments of learning already achieved, while formative assessments are assessments for learning still to come. There is solid evidence that good formative assessment promotes learning and leads to higher student achievement (Black and Wiliam, 1998, Fennema, Carpenter, Franke, Levi, Jacobs, and Empson, 1996, Black, Harrison, Lee, Marshall, and Wiliam 2002).

## TRY IT!

Exploiting the opportunities for formative assessment embedded in the *Foundation Science: Biology* Learning Experiences takes planning and keeping track on your part. Here are some major opportunities in Learning Experience 2:

I. In the *Brainstorming Discussion*, students' answers to open-ended questions shared during partner talk reveal much about their ideas about codes and what might happen if you change a code.

II. Students' written responses to the *Think About It* questions in Part A, particularly their understanding of the differences and similarities between replication DNA and transcription of DNA into RNA which will provide insight into students understanding of transcription. In *Part B*, students decode both the sense and anitsense strands of DNA, demonstrating their understanding of how information for proteins is encoded in sense strand of DNA. In *Part C*, when students translate their mRNA into short peptide chains,

their responses will tell you whether they understand complementarity and the relationship between codons and proteins.

III. The concept map in the *Analysis Questions* will show you how well students understand the sixteen terms on SB p 2-16 and the relationship among DNA, genes, proteins and traits.

IV. In the *Poster Presentation*, students' grasp of transcription, translation and how information in DNA results in traits will be demonstrated.

V. The summative multiple choice *Assessment Questions* at the end of the LE can be used formatively as well. Assign several questions to each table group and have them debate the alternative answers until consensus is reached.