

Strategies to Create a Coherent Science Content Storyline

Analysis Guide D1: Selecting and Using Content Representations

Main learning goal: Plants use sunlight, water, and air from their environment to make the food they need to live and grow.

Description of content representation: Leaf diagram of photosynthesis

Part 1: Selecting the Content Representation

Is the Content Representation ...	Yes	No
1. Scientifically accurate?		
2. Closely matched to the main learning goal?		
3. Presenting science ideas in ways that are comprehensible to students?		
4. Reinforcing or introducing student misconceptions?		
5. Addressing common student misconceptions?		
6. Distracting students from the main learning goal with too many details or new terms?		

Part 2: Engaging Students in Using the Content Representation

Is the Content Representation Used in a Way That Involves Students In ...	Yes	No
1. Modifying or creating the content representation?		
2. Analyzing the meaning of the content representation?		
3. Critiquing the content representation?		

Part 3: Suggestions for Improvement

Strategies to Create a Coherent Science Content Storyline

Analysis Guide D2: Selecting and Using Content Representations

Main learning goal: Plants use sunlight, water, and air from their environment to make the food they need to live and grow.

Description of content representation: Role-play of photosynthesis

Part 1: Selecting the Content Representation

Is the Content Representation ...	Yes	No
1. Scientifically accurate?		
2. Closely matched to the main learning goal?		
3. Presenting science ideas in ways that are comprehensible to students?		
4. Reinforcing or introducing student misconceptions?		
5. Addressing common student misconceptions?		
6. Distracting students from the main learning goal with too many details or new terms?		

Part 2: Engaging Students in Using the Content Representation

Is the Content Representation Used in a Way That Involves Students In ...	Yes	No
1. Modifying or creating the content representation?		
2. Analyzing the meaning of the content representation?		
3. Critiquing the content representation?		

Part 3: Suggestions for Improvement

Strategies to Create a Coherent Science Content Storyline

Analysis Guide D3: Selecting and Using Content Representations

Main learning goal: Plants use sunlight, water, and air from their environment to make the food they need to live and grow.

Description of content representation: Mixing-bowl analogy of photosynthesis

Part 1: Selecting the Content Representation

Is the Content Representation ...	Yes	No
1. Scientifically accurate?		
2. Closely matched to the main learning goal?		
3. Presenting science ideas in ways that are comprehensible to students?		
4. Reinforcing or introducing student misconceptions?		
5. Addressing common student misconceptions?		
6. Distracting students from the main learning goal with too many details or new terms?		

Part 2: Engaging Students in Using the Content Representation

Is the Content Representation Used in a Way That Involves Students In ...	Yes	No
1. Modifying or creating the content representation?		
2. Analyzing the meaning of the content representation?		
3. Critiquing the content representation?		

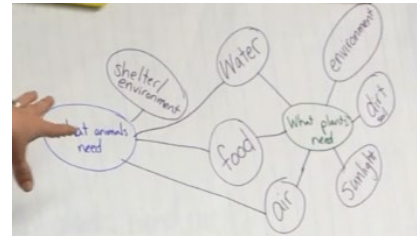
Part 3: Suggestions for Improvement

Strategies to Create a Coherent Science Content Storyline

Analysis Guide D4: Selecting and Using Content Representations

Main learning goal:

- To live and grow, all animals need food, water, and air from their environment. Plants need water, air, and sunlight from their environment to make food they can use to live and grow.



Description of content representation: A double bubble thinking map that shows what animals and plants need from their environment

Part 1: Selecting the Content Representation

Is the Content Representation ...	Yes	No
1. Scientifically accurate?		
2. Closely matched to the main learning goal?		
3. Presenting science ideas in ways that are comprehensible to students?		
4. Reinforcing or introducing student misconceptions?		
5. Addressing common student misconceptions?		
6. Distracting students from the main learning goal with too many details or new terms?		

Part 2: Engaging Students in Using the Content Representation

Is the Content Representation Used in a Way That Involves Students In ...	Yes	No
1. Modifying or creating the content representation?		
2. Analyzing the meaning of the content representation?		
3. Critiquing the content representation?		

Part 3: Suggestions for Improvement

Strategies to Create a Coherent Science Content Storyline

Analysis Guide D5: Selecting and Using Content Representations

Main learning goal: Both plants and animals need food, water, and air to live and grow. Plants also need sunlight to make their own food inside their leaves. Animals can't do this.

Description of content representation: _____

Part 1: Selecting the Content Representation

Is the Content Representation ...	Yes	No
1. Scientifically accurate?		
2. Closely matched to the main learning goal?		
3. Presenting science ideas in ways that are comprehensible to students?		
4. Reinforcing or introducing student misconceptions?		
5. Addressing common student misconceptions?		
6. Distracting students from the main learning goal with too many details or new terms?		

Part 2: Engaging Students in Using the Content Representation

Is the Content Representation Used in a Way That Involves Students In ...	Yes	No
1. Modifying or creating the content representation?		
2. Analyzing the meaning of the content representation?		
3. Critiquing the content representation?		

Part 3: Suggestions for Improvement
