

# Developing Formative Assessment Practices

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## Transformation

### **Redefinition**

*Tech allows for the creation of new tasks,  
previously inconceivable*

### **Modification**

*Tech allows for significant task redesign*

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### **Augmentation**

*Tech acts as a direct tool substitute,  
with functional improvement*

### **Substitution**

*Tech acts as a direct tool substitute,  
with no functional change*

## Enhancement



| Social   | Mobility  | Visualization  | Storytelling   | Gaming   |
|--|---|--|--|--|
| 200,000 years  | 70,000 years  | 40,000 years   | 17,000 years   | 8,000 years  |
|  |  |  |  |  |



## The EdTech Quintet – Associated Practices

|               |   |
|---------------|---|
| Social        | Communication, Collaboration, Sharing   |
| Mobility      | Anytime, Anyplace Learning and Creation |
| Visualization | Making Abstract Concepts Tangible       |
| Storytelling  | Knowledge Integration and Transmission  |
| Gaming        | Feedback Loops and Formative Assessment |

# Black and Wiliam: Defining Formative Assessment

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“Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited.”

# Wiliam: A Framework for Formative Assessment

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|         | Where the learner is going   | Where the learner is right now   | How to get there                                    |
|---------|--|--|---|
| Teacher | 1<br>Clarifying learning intentions and criteria for success           | 2 Engineering effective classroom discussions and other learning tasks that elicit evidence of student understanding | 3<br>Providing feedback that moves learners forward |
| Peer    | Understanding and sharing learning intentions and criteria for success | 4<br>Activating students as instructional resources for one another  |   |
| Learner | Understanding learning intentions and criteria for success             | 5<br>Activating students as the owners of their own learning   |   |

# 1. Clarifying, Sharing, and Understanding Learning Intentions and Criteria for Success

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- Rubric Dichotomies:
  - Task-specific vs. generic rubrics
  - Product-focused vs. process-focused
  - Official vs. student-friendly Language
- Rubric Design:
  - Three key components in presenting learning intentions and success criteria to students:
    - WALT: we are learning to
    - WILF: what I'm looking for
    - TIB: this is because
  - Make explicit progressions within rubrics, and progressions across rubrics
- Students and Rubrics:
  - Have students look at samples of other students' work, then rank them by quality
    - Students become better at seeing issues in their own work by recognizing them in others' work
    - Not a “somebody wins” exercise, but rather a quality exercise that engages students
  - Have students design test items, rubrics

# Rubric Example #1: A Classical Rubric for Concept Maps

(M. Besterfield-Sacre et al., 2004)

|   | <i>1</i>   | <i>2</i>   | <i>3</i>   |
|---|--|--|--|
| <i>Comprehensiveness</i> – covering completely/broadly                          | The map lacks subject definition; the knowledge is very simple and/or limited. Limited breadth of concepts (i.e. minimal coverage of coursework, little or no mention of employment, and/or lifelong learning). The map barely covers some of the qualities of the subject area. | The map has adequate subject definition but knowledge is limited in some areas (i.e., much of the coursework is mentioned but one or two of the main aspects are missing). Map suggests a somewhat narrow understanding of the subject matter. | The map completely defines the subject area. The content lacks no more than one extension area (i.e., most of the relevant extension areas including lifelong learning, employment, people, etc. are mentioned). |
| <i>Organization</i> – to arrange by systematic planning and united effort       | The map is arranged with concepts only linearly connected. There are few (or no) connections within/between the branches. Concepts are not well integrated.  | The map has adequate organization with some within/between branch connections. Some, but not complete, integration of branches is apparent. A few feedback loops may exist.  | The map is well organized with concept integration and the use of feedback loops. Sophisticated branch structure and connectivity.   |
| <i>Correctness</i> - conforming to or agreeing with fact, logic, or known truth | The map is naïve and contains misconceptions about the subject area; inappropriate words or terms are used. The map documents an inaccurate understanding of certain subject matter.   | The map has few subject matter inaccuracies; most links are correct. There may be a few spelling and grammatical errors.   | The map integrates concepts properly and reflects an accurate understanding of subject matter meaning little or no misconceptions, spelling/grammatical errors.  |

*Table 4. Concept Map scoring rubric (Understanding of Engineering Field).*



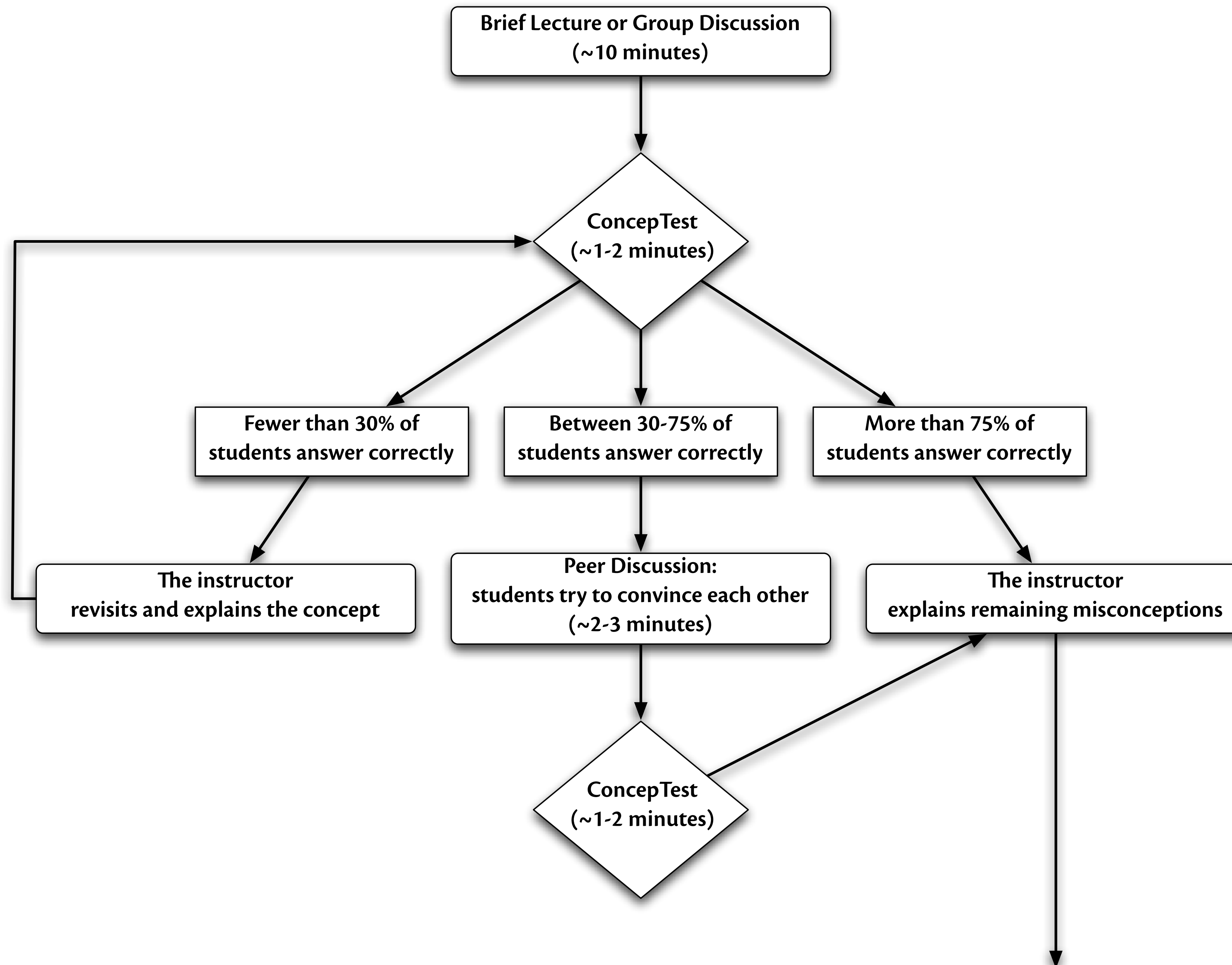
# Rubric Example #2: A Rubric for Sociology Online Discussion (S. Evans, 2010)

|                       | 4 Points  | 2 Point   | 0 Points   |
|-----------------------|---|---|--|
| Content               | You show that you can apply or extend the idea you are discussing.  | Some of your messages analyze, interpret, or apply the material well, but some do not. This might either be because the analysis was not done well, or because it was not attempted (that is, was simply opinion or hearsay). | Your messages generally show little evidence of analysis, consisting instead of opinion, feelings and impressions. |
| Accuracy              | You accurately represent the concepts discussed.  | You generally represent the concepts accurately, but you do not do so in all cases.   | You have significant issues with regard to accurately representing the concepts.                                   |
| Use of material       | You use and cite sources, including the text and articles and/or bring in an outside source, all of which clearly add <i>significantly</i> to the discussion. | You clearly refer back to a definition, example or concept from the reading or lecture.   | You do not bring in or refer to any material from the text, outside sources, or lectures.                          |
| Sociological Analysis | You focus on the sociological implications of the issue at hand (e.g., social meaning, the outcomes for society or groups, the social function served).       | You touch on some sociological issues, but focus also on individual ones.   | You focus primarily on individual issues.  |
|                       | 2 Points  | 1 Point   | 0 Points   |
| Responses             | You extend or politely question the post of another person in a way that advances the discussion.   | You add new examples that continue the idea created by another person.  | Your responses are primarily agreement.  |
| Participation         | You write at least three or more substantive comments (using the above criteria) based on the discussion assigned.  |   | You write fewer than three substantive comments.   |
| Time of Posting       | Your posts are spread widely during the discussion.   | You post at two significantly different times.  | Your posts are clustered within a short period of time.  |
| Posts Read            | You have read at least 75% of the posts in the discussion.  | You read at least 50% of the posts in the discussion.   | You read less than 50% of the posts in the discussion.   |
| Clarity               | You use standard grammar and spelling and your meaning is clear.  | Your posts have some grammar or spelling mistakes or your meaning is not entirely clear.  | Your posts have significant grammar or spelling mistakes or your meaning is not clear.                             |

## 2. Eliciting Evidence of Learners' Achievement in the (Extended) Classroom

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- Asking questions in class:
  - Chosen to act as a discussion/thinking trigger
  - Should provide info for varying instruction on the fly and in the long term
  - Examples:
    - ConcepTest
    - POE (Predict-Observe-Explain)
    - TPS (Think-Pair-Share)
    - Virtual Whiteboard





### 3. Providing Feedback that Moves Learners Forward

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- The feedback process must provide a recipe for future action
- Feedback should:
  - Be more work for the recipient than the donor, i.e., not just right/wrong – make them think about what did not work
  - Be focused: less is more
  - Relate explicitly to goals/rubrics
- How:
  - Scores or praise alone do not provide this; comments do
  - Supplying minimal scaffolded responses (i.e., where the student got stuck) >> supplying a full response to the problem
    - This emphasizes the crucial role of the draft object and process
  - Oral feedback >> written feedback
    - Consider using recordings
  - Create (sometimes together with students) process rubrics that embody this scaffold
  - Provide time for students to use this feedback
- Minimize grading:
  - Avoid false stopping points
  - Avoid ratchet effect

# Stu Dent

Reading Summary

Power Words

## Reading Progress Report



## Reading Report

READING  
LEVEL

7

± 0.6

ARTICLES  
VIEWED

19

AVG. TIME  
IN ARTICLE

10 min

3:13 hr Total

QUIZ  
AVERAGE

68.8%

4 Taken

WRITE  
AVERAGE

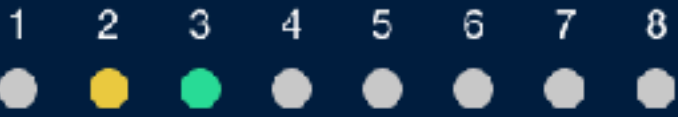
-

AVG. ANNOTATIONS  
PER ARTICLE

0.6

12 Total

READING SKILLS



## 4. Activating Students as Instructional Resources for One Another

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- Two key elements:
  - Group goals
  - Individual accountability
- Effectiveness due to (in order of importance):
  - Personalization
  - Cognitive Elaboration
  - Motivation
  - Social Cohesion
- Reciprocal help only works when it takes the form of elaborated explanations:
  - Not simple answers or procedures
  - Looks to the upper levels of Bloom for both participants
- Reciprocal help is more effective (by a factor of up to 4) if the product being assessed is the result of the aggregate of individual contributions, rather than just one group product



AT&T

4:34 AM

100%

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storymap.knightlab.com

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📄

My Maps

Options

Save

Publish Changes

Help

Share

The lute an...

1

The Barbat

2

The Oud

+

Add Slide

Map Overview

stan

# THE LUTE AND THE SILK ROAD

Start Exploring

StoryMapJS

Leaflet

Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under CC BY SA.

# 5. Activating Students as Owners of their Own Learning

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- Effective self-assessment is up to twice as effective as other-assessment
- Two key components:
  - Metacognition:
    - Metacognitive knowledge: know what you know
    - Metacognitive skills: what you can do
    - Metacognitive experience: what you know about your cognitive abilities
  - Motivation:
    - Traditionally viewed as a cause (intrinsic/extrinsic), but is better viewed as an outcome:
      - Flow (M. Csikszentmihalyi): the result of a match between capability and challenge
        - Students are motivated to reach goals that are specific, within reach, and offer some degree of challenge
- Three sources of info for students to decide what they will do:
  - Perceptions of the task and its context
  - Knowledge about the task and what it will take to be successful
  - Motivational beliefs
- The role of the draft process and object resurfaces as a crucial component here
- Important Tools:
  - Learning logs and journals
  - Learning portfolios



https://www.jasondavies.com/wordcloud/

Dorothy

great

Witch

Tin

back

one

Woodman

green

little

see

Lion

Scarecrow

asked

Oz

came

Toto

head

made

Paste your text below

Aunt Em had just come out of the house to water the cabbages when she looked up and saw Dorothy running toward her.

"My darling child!" she cried, folding the little girl in her arms and covering her face with kisses; "where in the world did you come from?"

"From the Land of Oz," said Dorothy, gravely. "And here is Toto, too. And oh, Aunt Em! I'm so glad to be at home again!"

Go!

Spiral: ☐ Archimedean ☒ Rectangular

Scale: ☐ log n ☐  $\sqrt{n}$  ☒ n

Font:

1 orientations from 0° to 0°

0°

-90°

90°

Number of words:

☐ One word per line

Download:

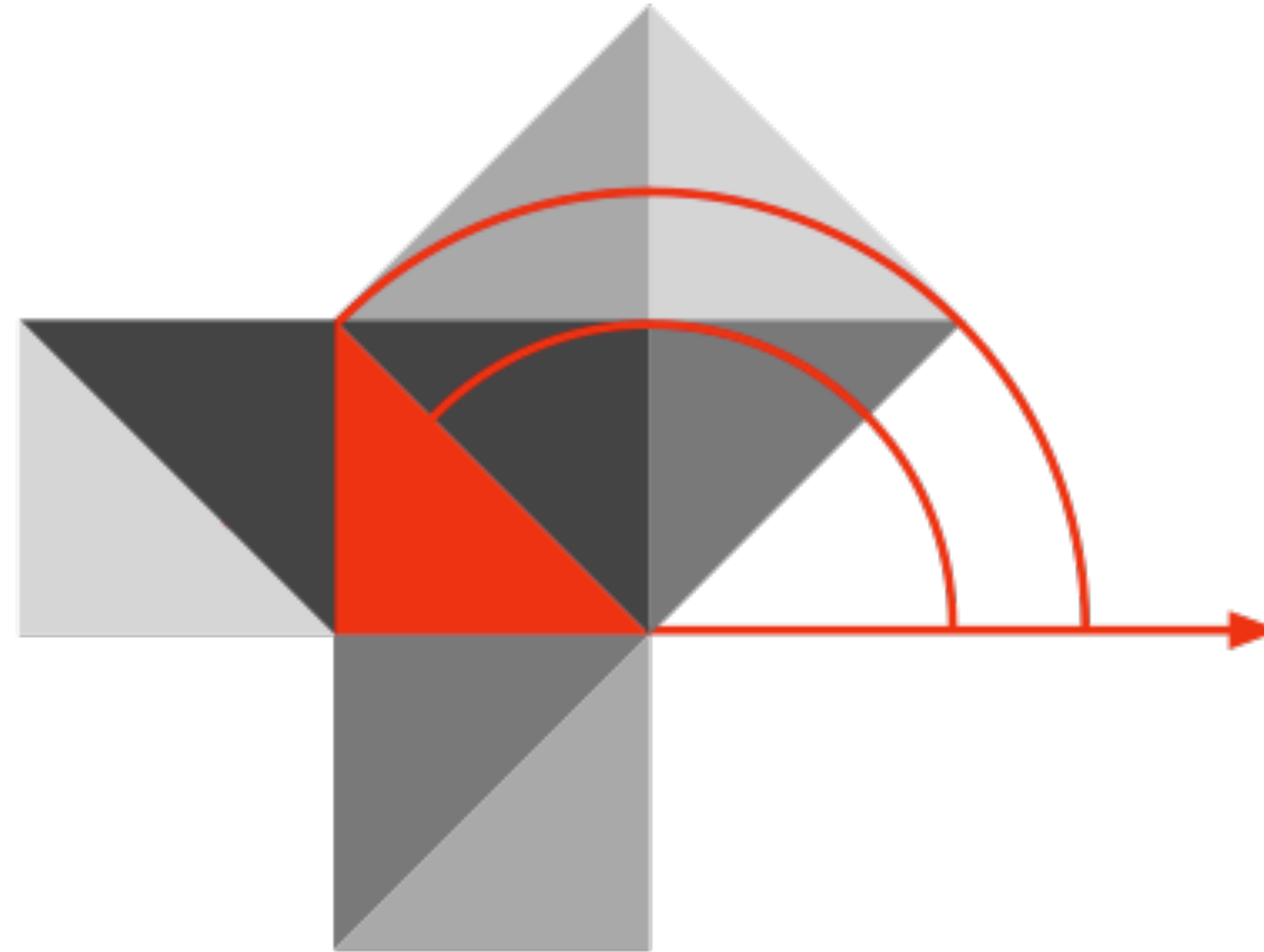
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[How the Word Cloud Generator Works.](#)



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