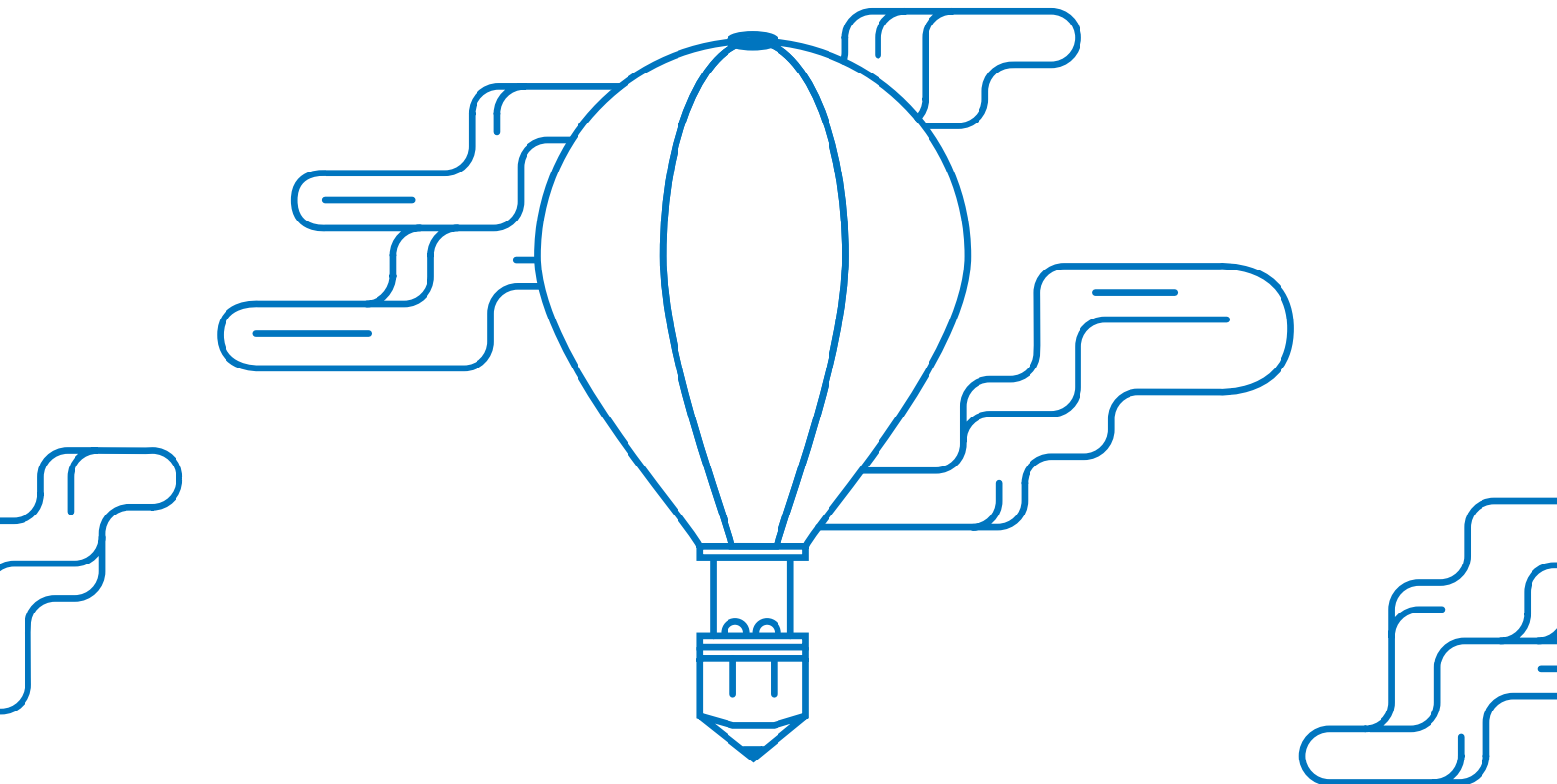


# Appendix

**Choosing a creativity assessment  
that is fit for purpose**



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This appendix is meant to provide examples of the types of creativity assessments that exist and are in development. A more complete listing of test of creativity, though still not exhaustive, may be found in Puccio and Murdock, 1999, or Runco, 1999 (though they will not include instruments developed since 1999, of course). However, they will not, of course, include the instruments developed since 1999.

The examples listed in this appendix are categorized according to the four Ps that are often used to study creativity:

**Person, Process, Product, and Press**

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# Person

Measures of the creative person typically measure the creative personality or life experiences. These can be further broken down into instruments designed to be used with adults and those for children.

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<b>Biographical Inventories</b>	<b>Page 5</b>
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# Gough Creative Personality Scale

One of the best known measures to detect creative traits in adults is the **Gough Creative Personality Scale** (Gough, 1979). Derived from other personality scales, a 30-item self-report scale was created, which moderately correlated ( $r \sim .30$  for all samples) with creativity ratings used as criteria from "expert judges, faculty members, personality-assessment staff observers, and life-history interviewers" for samples from a "wide range of ages, kinds of work, and circumstances of testing" (Gough, p. 1403).

## Key characteristics

<b>What:</b>	Person
<b>Age:</b>	Adult
<b>Source:</b>	Self-Report
<b>Format:</b>	Paper
<b>Creativity:</b>	General

## Example from Gough's adjective checklist

Please indicate which of the following adjectives best describe yourself. Check all that apply. (Creative characteristics are marked +)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Capable   | <input type="checkbox"/> Honest                    |
| <input type="checkbox"/> Artificial           | <input checked="" type="checkbox"/> Intelligent    |
| <input checked="" type="checkbox"/> Clever    | <input type="checkbox"/> Well-mannered             |
| <input type="checkbox"/> Cautious             | <input checked="" type="checkbox"/> Wide interests |
| <input checked="" type="checkbox"/> Confident | <input checked="" type="checkbox"/> Inventive      |

# Biographical Inventories

Another type of measure of the creative person is the **biographical inventory**. Based on the presumption that creative people have some common life experiences that can predict adult creativity, these inventories ask about a number of things such as hobbies, interests, and childhood activities.

One such inventory, the **Alpha Biographical Inventory** (Institute for Behavioral Research in Creativity, 1968) was developed with NASA scientists and engineers, and was later extended to identify high school students gifted in the arts: visual arts, music, dance, and theater, from self-report and school records. These ratings were validated with faculty ratings, peer nominations, and school records.

Another, **Schaefer's Biographical Inventory** (1970, also asks about physical characteristics, family history, and educational history (Hocevar, 1981). The latter has both a math-science dimension and an art-writing dimension for boys, but for girls, there is just a writing dimension and an art dimension. With the first scale limited to predicting only scientific creativity or artistic creativity, and the second having different dimensions for the two genders, these instruments have had limited usefulness. Also, these instruments are dated and the biographical correlates may no longer be as valid.

On the next page: Example of information used on the **Alpha Biographical Inventory** on the Arts.

## Key characteristics

<b>What:</b>	Person
<b>Age:</b>	Teens and Adults
<b>Source:</b>	Self-Report, faculty ratings, peer nominations
<b>Format:</b>	Paper
<b>Creativity:</b>	Specific abilities

## Multiple criteria and their sources for students in the arts

---

Criteria	Source and Method of Measurement
Sensitivity	Faculty (rating form)
Motivation	Faculty (rating form)
Expression of self	Faculty (rating form)
Potential	Faculty (rating form)
Music (6 items)	Faculty (checklist)
Visual art (6 items)	Faculty (checklist)
Dance (6 items)	Faculty (checklist)
Theater (6 items)	Faculty (checklist)
Creativity (6 items)	Faculty (checklist)
Leadership (6 items)	Faculty (checklist)
Stimulation (6 items)	Faculty (checklist)
Technical competence	Peer nominations
Personal style	Peer nominations
Number of awards	Self-report
Chairs	School records
Academic GPA	School records
Artistic GPA	School records
Art versus non-art	School records
Area of artistic endeavor	School records

### Control variables

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Sex	School records and BI answer sheet
Age	School records and BI answer sheet
Grade in school	School records and BI answer sheet
Experience in arts*	BI item 14
Likeability	Faculty (checklist)

# Scales for Rating the Behavior Characteristics of Superior Students (SRBCSS)

The **Scales for Rating Behavioral Characteristics of Superior Students** (SRBCSS, Renzulli et al., 2013) is designed to obtain a knowledgeable adult's assessment of children's characteristics in several areas, one of which is creativity. An adult who knows the child, usually a teacher, rates the student on a Likert scale for several traits associated with the characteristic. Now in its third edition, this is a very popular instrument for screening students because it is based on 40 years of research and is fast and easy to score. Criticisms are that since it is all worded positively, in other words, all of the descriptors are positive indicators of creativity, it is susceptible to response bias wherein a rater decides that a student is creative and marks "always" for all descriptors or the converse. Also, if students are not given opportunities to show their creative characteristics in school, they will not likely be observed.

## Key characteristics

<b>What:</b>	Person
<b>Age:</b>	Child
<b>Source:</b>	Report from adult who knows child
<b>Format:</b>	Paper
<b>Creativity:</b>	General, but there are other scales in the battery to measure ability in specific areas
<b>URL:</b>	<a href="https://bit.ly/38Qhc3q">https://bit.ly/38Qhc3q</a>

## Example from SRBCSS, creativity scale

The student demonstrates...	Never	Very rarely	Rarely	Occasionally	Frequently	Always
1. imaginative thinking ability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. a sense of humor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. the ability to come up with unusual, unique or clever responses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. an adventurous spirit or a willingness to take risks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# What Kind of Person Are You? (WKOPY)

Published by Torrance and Khatena (1970) as a brief screening instrument, **What Kind of Person Are You?** is composed of 50 forced choice descriptors of characteristics that the first author derived from studies of creative individuals (WKOPY, Torrance & Khatena, 1970).

## Key characteristics

<b>What:</b>	Person
<b>Age:</b>	Teens and Adults
<b>Source:</b>	Self Report
<b>Format:</b>	Paper
<b>Creativity:</b>	General

## Example from What Kind of Person are You?

Read each pair of descriptors. Mark an X in front of the one that best describes you. (Characteristics scored as more creative are marked X in this example.) Items involve having the respondents indicate which of two options best describe them as in the example below.

- A good guesser  
 Receptive to ideas of others
- Self-confident  
 Curious
- A self-starter  
 Obedient
- Remembers well  
 Intuitive
- Unwilling to accept things on mere say so  
 Obedient
- Courteous  
 Altruistic



# Reisman Diagnostic Creativity Assessment (RDCA)

## The Reisman Diagnostic Creativity Assessment

(RDCA, Reisman, Keiser, & Otti, 2016) is of note because it was designed as an app available through iTunes for free. Like some of the other self-report assessments, it had respondents rate themselves on a six-point scale from strongly disagree to strongly agree on 40 items. The respondent would then immediately get a profile of relative strengths and weaknesses, ranked from Very High to Very Low on each of 11 factors measured: Originality, Fluency, Flexibility, Elaboration, Tolerance of Ambiguity, Resistance to Premature Closure, Divergent Thinking, Convergent Thinking, and Risk Taking. This is written in past tense because the **RDCA** App (which was an Apple only app) became unusable under the new iOS system. The authors have not yet successfully transferred it to a new OS platform as an app nor to the planned web-based site. They have been using Qualtrics via Drexel University's site license in the interim for their students to use.

## Key characteristics

<b>What:</b>	Person
<b>Age:</b>	Adults
<b>Source:</b>	Self-Report
<b>Format:</b>	Online app
<b>Creativity:</b>	General

## Example from the Reisman Diagnostic Creativity Assessment

**Strongly Disagree**      **Moderately Disagree**      **Mildly Disagree**      **Mildly Agree**      **Moderately Agree**      **Strongly Agree**

1. I keep an open mind.
2. I am willing to tackle challenging tasks even when success is uncertain.
3. I regularly come up with novel uses for things.

# The Creative Personality-Potential Composite

A new measure designed to provide an estimate of trait-based creative potential has been developed by Shepard (2019). There is a 39-item long-form version of the measure, and a 27-item short version administered online. The long-form version has eight subscales focused on problem-awareness, novelty, complexity, sensitivity, non-conformity, independence, flexibility, and fluency.

## Key characteristics

<b>What:</b>	Person
<b>Age:</b>	Older teens and Adults
<b>Source:</b>	Self-Report
<b>Format:</b>	Online
<b>Creativity:</b>	General
<b>Availability:</b>	aubra.shepard25@uga.edu

## Example from The Creative Personality-Potential Composite

Now, you will see 39 descriptors that may or may not fit with how you see yourself. Consider how well each of these describes who you are. This might be different from your actual behavior in some situations. That is okay, just select the response that you think best describes your truest self. Please select an answer for each question, even if you need to approximate.

**Please rate the extent to which each of the following describe who you are:**

**(1)** Not at all like me **(2)** Somewhat unlike me **(3)** A little unlike me **(4)** A little like me **(5)** Somewhat like me **(6)** Exactly like me.

- 1.** Different. You are not like most other people.
- 2.** Creative. You think or act in a creative fashion.
- 3.** A Nonconformist. You are not afraid to ruffle some feathers, to go against what the crowd is doing.
- 4.** Perceptive. You notice things. Details that others miss are obvious to you.

# Process

Measures of the creative process usually have the person do something to show creative thinking. Most often, these tasks involve thinking of many different ideas, called *divergent thinking*, or thinking of one appropriate idea, called *convergent thinking*.

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Vast Creative Abilities Indicator (VCAI)	Page 15
Cebeci Test of Creative Thinking (CTC)	Page 16
The Test for Creative Thinking - Drawing Production (TCT-DP)	Page 17
The Evaluation of Potential Creativity (EPoC)	Page 19
The Remote Associates Test (RAT)	Page 20

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# The Guilford Tests

Guilford led the way in assessing creativity by developing tests of divergent thinking, which he considered an essential element of creativity and a part of his model of human intelligence (Guilford, 1967). Guilford and his colleagues devised tasks to which people would give many responses, in other words, use divergent thinking, instead of one correct response, convergent thinking. The responses to these tasks were measured primarily for a) fluency, the number of ideas; b) flexibility, the variety of ideas; c) originality, the rarity of ideas; and d) elaboration, the completeness and detail of the expressed ideas. Different tasks measured different components. Guilford's ground breaking work greatly influenced succeeding researchers who developed tests based on his tests of divergent thinking (e.g. Getzels & Jackson, 1962; Torrance, 1966; Wallach & Kogan, 1965), which used some version of his scoring criteria. Some examples of these tasks and what they measured include (Siegel, 1962):

## Key characteristics

<b>What:</b>	Process
<b>Age:</b>	Adults
<b>Source:</b>	Activities
<b>Format:</b>	Paper
<b>Creativity:</b>	General

## Examples of tests by Guilford and colleagues

- "List all of the words that you can think of that start with a B." The number of words are counted to give a fluency measure (Fluency, Christensen & Guilford, 1959).
- "How many different uses can you think of for a paper cup?" The number of different uses is counted for flexibility (Alternative Uses, Christensen, Guilford, Merrifield, & Wilson, 1960).
- "In what ways could you raise money for a class trip?" The number and novelty of ideas are counted for fluency and originality (Pertinent Questions, Berger & Guilford, 1960).
- "What might happen if people didn't need to sleep?" This is also measured for fluency and originality (Consequences, Christensen, Merrifield, & Guilford, 1958).

# The Torrance Tests of Creative Thinking

The most widely used creativity tests are **the Torrance Tests of Creative Thinking** (TTCT, Torrance, 1966; 2017), which have been translated into over 40 languages. Comprised of a verbal and figural form, these are designed to be used as a battery, but are often given independently. There are parallel forms for both the figural and verbal tests.

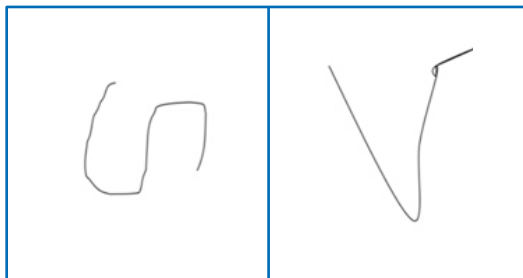
The figural test is composed of three activities with shapes that respondents are asked to add lines to with a pencil in order to make pictures and assign titles within a timed period. The actual instructions are a bit more detailed, asking respondents to try to think of something no one else will think of and add details to tell a complete story. Samples from one of the 31 activities on the **TTCT-Figural** look like this.

## Key characteristics

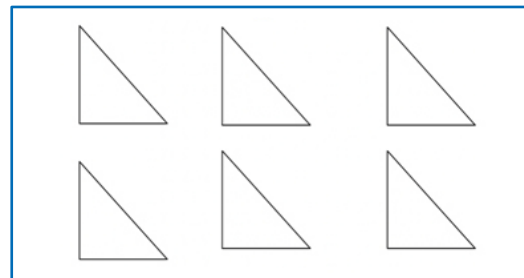
<b>What:</b>	Process
<b>Age:</b>	Adult
<b>Source:</b>	Activities
<b>Format:</b>	Paper
<b>Creativity:</b>	General
<b>Availability:</b>	<a href="http://www.ststesting.com/gift">www.ststesting.com/gift</a>

## Examples from TTCT-Figural

Add lines to the incomplete figures below to make pictures out of them. Try to tell complete stories with your pictures. Give your pictures titles. You have 2 minutes.



Add details to the triangles below to make pictures out of them. Give your pictures titles. You have 2 minutes.



The figural tests of the **TTCT** are scored for five abilities: fluency (number of figures completed), originality (novelty as compared to age/grade norms), elaboration (detail), abstractness of titles (how meaningful and abstract the titles are), and resistance to premature closure (whether the person immediately closes off the open area or not). These scores are converted to standard scores and percentiles based on the scores of other children of the same age or grade. In addition, the figural test notes the occurrence of 13 creative strengths, such as such as humor, emotional expressiveness, boundary breaking, and storytelling articulateness (Torrance, 1979; 2017). Scoring is done by trained scorers.

The verbal test is composed of six timed activities with the first three related to a picture, and require Asking Questions, Guessing Causes, and Guessing Consequences as in this example:

## Examples from TTCT-Verbal

1. Asking Questions: Write all the questions you can think about what is happening in the picture.
2. Guessing Causes: List as many possible causes as you can of the action shown in the picture.
3. Guessing Consequences: List as many possibilities as you can of what might happen right afterwards or things that might happen as a result long afterwards in the future.



Activity four, Product Improvement, has the respondent think of ideas to improve a product, such as a stuffed toy sheep, to make it more fun to play with. Activity five, Product Improvement, has respondents list as many unusual uses they can think of for a common object, like a paper towel roll. Activity six is Just Suppose, which requires that as many ideas be listed as possible in response to a hypothetical event. All tests on the Verbal form are scored for fluency (number of ideas), flexibility (variety of ideas), and originality (novelty of ideas).

Although classified as a test of divergent thinking, Torrance argued that his tests measure more than that since he added the list of creative strengths to the figural form in 1978 (Torrance, 1979; 2017). Torrance conducted longitudinal research to investigate the predictive validity of the tests and reported results from four follow-up assessments. A 40-year follow-up was conducted after Torrance passed away (Cramond, Matthews-Morgan, Bandalos, & Zuo, 2005), and most recently, a 50-year follow-up was conducted (Runco, Millar, Acar, & Cramond, 2011). All of these studies provided evidence of the predictive ability of the **TTCT** for real life creative accomplishments later in life. In spite of this, the tests are not more widely used primarily because of the cost involved in both purchasing the tests and paying trained scorers or having people learn to score them. Also, the tests do not measure all aspects of creativity, but they do not purport to do so.

# Vast Creative Abilities Indicator (VCAI)

A shortened version of the TTCT was created for talent screening when it was not feasible to administer the complete verbal and figural batteries of the TTCT. Torrance and Goff created the ATTA (Abbreviated Torrance Tests for Adults) for Goff's doctoral research (1989), and it was published in 2002 by Scholastic Testing Service.

Goff continued to work with the ATTA and partnered with Guzik in 2012 to create a digital creativity assessment. Their efforts have resulted in the **Vast Creative Abilities Indicator (VCAI)**, a cloud-based assessment for identifying creative abilities and strengths. The **VCAI** is based on the research behind the TTCT and ATTA. Scoring of the VCAI utilizes established assessment metrics developed and employed to assess the TTCT and the ATTA. In addition to creative abilities, the **VCAI** identifies 12 Creative XFactors. The **VCAI** XFactors provide rich and powerful clues regarding your creative potential. They are important to understand as key contributing elements of productive collaborations and teamwork: Empathic Perspective, Humor, Richness and Colorfulness, Fantasy, Emotions and Feelings, Provocative Questions, Future Orientation, Expressiveness of Titles, Openness, Context, Combination and Synthesis, Unusual, Different Perspective.

## Key characteristics

<b>What:</b>	Process
<b>Age:</b>	Adult
<b>Source:</b>	Activities
<b>Format:</b>	Online
<b>Creativity:</b>	General
<b>Availability:</b>	<a href="http://www.vcaiteam.com">www.vcaiteam.com</a>

# Cebeci Test of Creative Thinking (CTC)

The **Cebeci Test of Creative Thinking** (Cebeci, 2019) was developed in Turkey but is available in English and is intended to be administered and scored electronically to make it more available to schools. It is connected with Renzulli Learning (Renzulli, n.d.) to help educators provide students with learning opportunities best suited for them. Similar in design to other tests of divergent thinking, The **Cebeci Test of Creativity (CTC)** is a digital creativity assessment of the four creative domains, which include: fluency, flexibility, originality and elaboration. The CTC is intended overcome the barriers of the expense and time involved in traditional creativity assessment by being completely web-based and scored dynamically, thereby reducing the overall cost. Technology requirements are minimal. A simple page of instructions and a brief tutorial is all it takes to administer the **CTC**.

One of the major motivations for developing the **CTC** is to support educational opportunities for underserved populations. Although these students are a growing segment of our schools, due to low socio-economic status, they are rarely selected for gifted programming through traditional identification methods. The **CTC** aims to open the doors of gifted programs to a more diversified student population. The **CTC**, which is currently in beta, is available for preview in the Teacher Site, is included with Renzulli Learning at no additional cost.

## Key characteristics

<b>What:</b>	Process
<b>Age:</b>	6 years +
<b>Source:</b>	Activities
<b>Format:</b>	Online
<b>Creativity:</b>	General
<b>Availability:</b>	<a href="https://renzullilearning.com/creativity">renzullilearning.com/creativity</a>



# The Test for Creative Thinking - Drawing Production (TCT-DP)

Designed in Germany by Jellen and Urban (1986), this figural test is comprised of a single page with several figural fragments on it. The respondent is instructed to complete the drawing. The resulting drawing is evaluated for 14 key criteria that constitute as a whole the **TCT-DP** construct, and also serve as evaluation criteria (Jellen & Urban 1986; Urban & Jellen 1985, 1986).

## Key characteristics

<b>What:</b>	Process
<b>Age:</b>	Grades K-10
<b>Source:</b>	Activities
<b>Format:</b>	Paper
<b>Creativity:</b>	General
<b>Availability:</b>	<a href="http://www.testzentrale.de">www.testzentrale.de</a> or SWETS Test Services, Frankfurt

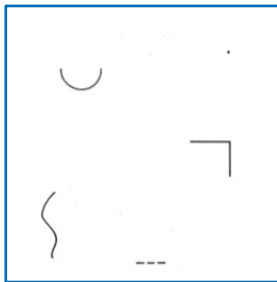
## TCT-DP Criteria

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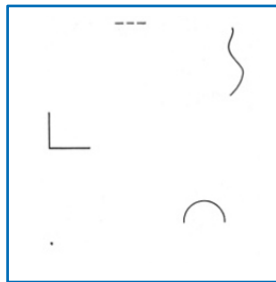
1. Continuations (Cn): Any use, continuation or extension of the six given figural fragments.
2. Completion (Cm): Any additions, completions, complements, supplements made to the used, continued or extended figural fragments.
3. New elements (Ne): Any new figure, symbol or element.
4. Connections made with a line (Cl) between one figural fragment or figure or another.
5. Connections made to produce a theme (Cth): Any figure contributing to a compositional theme or "gestalt".
6. Boundary breaking that is fragment dependent (Bfd): Any use, continuation or extension of the "small open square" located outside the square frame.
7. Boundary breaking that is fragment independent (Bfi).
8. Perspective (Pe): Any breaking away from two-dimensionality.
9. Humour and affectivity (Hu): Any drawing which elicits a humorous response, shows affection, emotion, or strong expressive power.
10. Unconventionality, a (Uc, a): Any manipulation of the material.
11. Unconventionality, b (Uc, b): Any surrealistic, fictional and/or abstract elements or drawings.
12. Unconventionality, c (Uc, c): Any usage of symbols or signs.
13. Unconventionality, d (Uc, d): Unconventional use of given fragments.
14. Speed (Sp): A breakdown of points, beyond a certain score-limit, according to the time spent on the drawing production

There are two parallel forms of the test, form A and form B. The authors have conducted studies to indicate the validity and reliability of this measure with different groups and referenced studies done by other researchers in other countries, such as Turkey, Morocco, Thailand, South Africa, Australia, and Nigeria.

**Test sheet "A"**



**Test sheet "B"**



Same elements, rotated with 180 degrees.

# The Evaluation of Potential Creativity (EPoC)

**The Evaluation of Potential Creativity (EPoC)**'s is comprised of eight subtests that were designed to measure both general and specific creative abilities in two content-domains (Verbal/literary and Graphic). Available in five languages: French; English; Arabic; Turkish; and German, it includes verbal and graphic sub-tests that measure the two key modes of creative cognition—divergent-exploratory thinking and convergent-integrative thinking—in elementary and middle-school students.

The divergent thinking tasks include having test-takers generate as many drawings as possible using a simple abstract shape or a familiar object. Verbal tasks include generating multiple simple story-endings in response to a unique story-beginning, or multiple story-beginnings in answer to a unique story-ending. The convergent thinking tasks in the graphic domain have test-takers produce a complete, original drawing, using at least four out of eight abstract shapes or familiar objects provided as a basis for their composition. In the verbal-literary domain, the convergent thinking tasks require test-takers to produce a complete story either based from a provided story title, or from the integration of a set group of fictional characters.

For more information, see the essay by Barbot & Lubart in this collection.

## Key characteristics

<b>What:</b>	Process
<b>Age:</b>	Children and adolescents
<b>Source:</b>	Activities
<b>Format:</b>	Paper
<b>Creativity:</b>	General and Specific

# The Remote Associates Test (RAT)

**The Remote Associates Test** (RAT; Mednick, 1968; Mednick & Mednick, 1971) is a test of association that is a convergent thinking measure. Each item on the test includes three words to which the respondent must come up with a fourth word that connects to them all. This creativity test is easy to score because there is a right answer. The respondent's score is the number of the 30 items that are answered correctly (Mednick, 1968). Below are some examples rated by difficulty level.

## Key characteristics

<b>What:</b>	Process
<b>Age:</b>	Adults
<b>Source:</b>	Activities
<b>Format:</b>	Paper
<b>Creativity:</b>	Verbal associations

## Example of RAT

Read the three words, then write a fourth word that connects to them all.

high / distinct / house	Correct answer: <b>school/court</b>	Easy
sense / courtesy / place	Correct answer: <b>common</b>	Medium
worm / shelf / end	Correct answer: <b>book</b>	Very easy
Piece / mind / dating	Correct answer: <b>game</b>	Hard

(Further examples of items are available online at [www.remote-associates-test.com](http://www.remote-associates-test.com))

Although the **RAT** showed promising reliability data, there were unanswered questions about its validity in terms of creativity assessment, with some questioning whether it is really more of a test of verbal intelligence (Kauffman, Plucker, & Baer, 2008; Lee, Huggins, & Theriault, 2014) and in some cases, knowledge of slang, which benefits native speakers (Datta, 1964). Also, although designed for easy scoring with one or two right answers, some have shown that there really can be more right answers for some items (Oleteanu & Falomir, 2015). Therefore, the **RAT** has been created specifically for some other cultures, for example, Chinese (Shen, Yuan, Liu, Yi, & Dou, 2016), Dutch (Chermahini, Hickendorff, & Hommel, 2012),

Italian, and Jamaican (Hamilton, 1982), and Japanese (Terai, Miwa, Asami, 2013). Perhaps because of the cultural and time dependency (as slang terms go in and out of use), the **RAT** is no longer published, but researchers still find the concept for measurement of associations helpful and have used items that are **RAT**-like in research (for example: Bowden & Jung-Beeman, 2003). More recently, researchers have attempted to retain the concept of measuring creativity through associations but removing the verbal problem by using figures instead of words (Toivainen, Olteteanu, Repeykova, Likhonov, & Kovas, 2019). Initial cross-cultural work for this attempt is promising.

# Product

It is logical that the most valid approach to measuring creativity is an assessment of a product – Creative people produce creative things. On the other hand, history is replete with examples of creative products that were not recognized as such during their creators' lifetimes, even by experts. The other issue with product assessment as a measure of creativity is that it may not always be the best way to measure potential. If looking for creative children, one must consider that their products are influenced by their experiences and access to resources. Yet, because of their innate validity, and because individuals are often called upon to judge the creativity of a product, there are instruments and methods for assessing creative products.

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**Creative Product Semantic Scale (CPSS)**

**Page 22**

**The Runco Ideational Behavior Scale (RIBS)**

**Page 23**

**Consensual Assessment Technique (CAT)**

**Page 24**

**Creative Solution Diagnosis Scale (CSDS)**

**Page 25**

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# Creative Product Semantic Scale (CPSS)

The **Creative Product Semantic Scale** (O'Quin & Besemer, 1989; 2006) is based on the premise that creative products can be judged according to three dimensions: novelty, resolution, and style. A product, and this is "broadly defined to include an idea, proposal, process, prototype, or tangible product" (p.34) is rated on a seven point scale for 55 adjective pairs. These adjectives describe the product's a) novelty, which includes how original and surprising it is; b) resolution, which refers to how logical, valuable, and useful it is; and c) style, which refers to the presentation style of the product, or how organic, well-crafted, and elegant the product is. This instrument, the result of years of work to refine and test it with different groups, is now available in an online version.

## Key characteristics

<b>What:</b>	Product
<b>Age:</b>	Any
<b>Source:</b>	Expert evaluation
<b>Format:</b>	Paper
<b>Creativity:</b>	Specific to Product

## Creative Product Semantic Scale

### Create product semantic scale (CPSS)

#### Novelty

- Surprise
- Originality

Original	1	2	3	4	5	6	7	Conventional
Warmed-over	1	2	3	4	5	6	7	trendsetting
Important	1	2	3	4	5	6	7	Unimportant

#### Resolution (usefulness)

- Logicalness
- Useful
- value
- understandability

Useless	1	2	3	4	5	6	7	Useful
Inessential	1	2	3	4	5	6	7	essential
Uninfluential	1	2	3	4	5	6	7	Indfluential
Adequate	1	2	3	4	5	6	7	Inadequate

#### Elaboration/synthesis (style)

- Organic design
- Well-craftedness
- Elegance

Well-made	1	2	3	4	5	6	7	Botched
Operable	1	2	3	4	5	6	7	Inoperable
Disordered	1	2	3	4	5	6	7	Ordered



# Consensual Assessment Technique (CAT)

Another method for identifying creative products is the **Consensual Assessment Technique (CAT)**, Amabile, 1982), which depends upon the subjective judgements of observers who are familiar with the domain of the product being judged. In order to apply the technique as described by Amabile, several conditions must be met. First, the task itself should be one that does not depend too heavily on specialized skills (e.g. drawing or writing) that might give some individuals an advantage by having more developed ability in them than others, and it must be open-ended enough to allow for creative responses. Second, the judges should all have some level of expertise in the field to allow them to have developed some internal criteria for the creativity and technical quality of products in the domain. Third, the procedure should follow this protocol. The judges should:

1. make their assessments of the products independently without any training specific to this judgement or any criteria for judging creativity in order to ensure that they are using their own implicit criteria.
2. be asked to assess other aspects of the product in addition to creativity, such as technical quality, aesthetics, and social impacts on those aspects.
3. rate the products relative to one another rather than to an absolute standard.
4. view the products in a different random order and rate the different aspects of the products in a different random order.

When this method was applied in several studies, the researchers were able to obtain reasonable reliability among the judges for ratings of creativity on products, most often artistic ones (Amabile, 1982).

## Key characteristics

<b>What:</b>	Products
<b>Age:</b>	Adults
<b>Source:</b>	Products
<b>Format:</b>	Artifacts
<b>Creativity:</b>	Specific

This technique for assessing creativity has several advantages. It has face validity in that a product that is judged independently to be creative by appropriate judges is creative. The method is analogous to how creative products and performances are judged in real life. Also, it is domain specific in that one is not being evaluated as being creative overall, but rather as being creative in a specific domain. One problem with this method is that it is very hard to find tasks for which a group of individuals has had equal background and training. Another is that in order to get high correlations for reliabilities among judges, there have to be a relatively large number of judges. In the seven studies reported by Amabile (1982), there were from 12 to 20 judges. In many real-life situations, it is difficult to get that many judges with expertise to judge student products: it can be expensive, cumbersome, and time consuming (Cropley & Kaufman (2012).



# Creative Solution Diagnosis Scale (CSDS)

To address the challenge of obtaining a sufficient number of expert judges for the Consensual Assessment Technique, Cropley and Kaufman (2012) configured the **Creative Solution Diagnosis Scale (CSDS)**. This scale was determined to provide non-expert judges with enough guidance to reliably assess the creativity of products without formal training. It should be noted that this scale was specifically designed to measure functional creativity, that is the novelty of products designed to serve some social purpose or solve a problem, in this case a mouse trap design. The same scale might not be as useful to judge creativity in other domains, such as the arts. The 21-item scale was designed to guide non-expert judges to evaluate creative products based on five categories (Cropley & Cropley, n.d.):

1. Relevance & Effectiveness, the artifact is fit for the purpose;
2. Problematization, the artifact helps to define the problem/task at hand);
3. Propulsion, the artifact sheds new light on the problem/task);
4. Elegance, the artifact is well-executed);
5. Genesis, the artifact changes how the problem/task is understood).

The example on the next page shows one indicator from each category, in order.

## Key characteristics

<b>What:</b>	Products
<b>Age:</b>	Adults
<b>Source:</b>	Products
<b>Format:</b>	Artifacts
<b>Creativity:</b>	Specific to functional creativity products

## Example from CSDS

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For each indicator, please select the appropriate response:

<b>1.</b> Correctness (the artefact accurately reflects conventional knowledge and/or techniques)	<b>Not at all</b>					<b>Completely</b>
	1	2	3	4	5	
<b>2.</b> Diagnosis (the artefact draws attention to shortcomings in other existing artefacts)	<b>Not at all</b>					<b>Completely</b>
	1	2	3	4	5	
<b>3.</b> Redirection (the artefact shows how to extend the known in a new direction)	<b>Not at all</b>					<b>Completely</b>
	1	2	3	4	5	
<b>4.</b> Convincingness (the observer sees the artefact as skillfully executed, well-finished)	<b>Not at all</b>					<b>Completely</b>
	1	2	3	4	5	
<b>5.</b> Foundationality (the artefact suggests a novel basis for further work)	<b>Not at all</b>					<b>Completely</b>
	1	2	3	4	5	

The complete instrument is online at:

[www.academia.edu/34332145/The\\_Creative\\_Solution\\_Diagnosis\\_Scale\\_CSDS\\_Assessment\\_App](http://www.academia.edu/34332145/The_Creative_Solution_Diagnosis_Scale_CSDS_Assessment_App)

# Press

## (Environment)

The press, which could be considered the environment if using the term broadly, includes time and place as well as the people, culture, physical setting, political climate, resources available, etc. Although instruments that assess creative press are not helpful for identifying creative individuals, they may be useful for designing environments to foster creativity.

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**KEYS**

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**24 Item Preference Scale**

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# KEYS

**KEYS** was developed by Amabile and her colleagues to assess the organizational climate for creativity (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Amabile, Taylor, & Gyskiewicz, 1995). Based on a conceptual model of environmental factors that either nurture or impede creativity, the instrument is designed to measure the climate in five areas that are hypothesized to affect creativity: encouragement of creativity; autonomy or freedom; resources; pressure, and organizational impediments to creativity.

In its fourth iteration (Amabile et al., 1996), **KEYS** contains 66 items written as simple descriptive statements that respondents rate according to how often that is true of their current work environment. These items are arranged into four scales that help determine what parts of the organization support creativity: Management Practices, Organizational Motivation, Resources, and Outcomes (**KEYS**, 2016). Some items measure positive impacts on creativity

and some measure impediments. The outcome scale items have respondents rate the products in their work unit according to their creativity and productivity. In order to avoid response bias, some items are written as positive and some as negatives. Although designed to be used in the work place, the instrument may be modified for use in other organizations. However, as it was developed for business, it may not be the best fit for schools because of the content and cost.

## Key characteristics

<b>What:</b>	Press
<b>Age:</b>	Adults
<b>Source:</b>	Member ratings
<b>Format:</b>	Paper
<b>Creativity:</b>	General

## Example from KEYS

Respond to each statement in terms of how often it is true of your current work place.

**Never** = 1, **Sometimes** = 2, **Often** = 3, **Always** = 4

### Management Practices

1. I have the freedom to decide how I am going to carry out my projects. (Freedom)
2. I feel challenged by the work I am currently doing. (Challenging work)
3. My supervisor serves as a good work model. (Managerial encouragement)
4. There is free and open communication within my work group. (Work group supports)
5. Organizational Motivation
6. People are encouraged to solve problems creatively in this organization. (Organizational encouragement).
7. There are many political problems in this organization. (Organizational impediments)
8. Resources
9. Generally, I can get the resources I need for my work. (Sufficient resources)
10. I have too much work to do in too little time. (Workload pressure)
11. Outcomes
12. My area of this organization is innovative. (Creativity)
13. My area of this organization is effective. (Productivity).

# 24 Item Preference Scale

Slightly different in focus from KEYS, but also designed to assess organizational creativity, Basadur and Hausdorf (1996) developed a questionnaire to measure attitudes within an organization toward creativity and creative problem solving. **The 24 Item Preference Scale** has respondents indicate on a five-point Likert scale to what degree they agree with each item. Some items were worded in reverse to limit response bias. Through theoretical and statistical analysis, the authors found that the attitudes toward creativity could be categorized into four factors: Valuing New Ideas, Creative Individual Stereotypes, Business Relevance of New Ideas, and Too Busy for New Ideas.

The example below has an item representing each one of these factors in order.

## Key characteristics

<b>What:</b>	Press
<b>Age:</b>	Adults
<b>Source:</b>	Member ratings
<b>Format:</b>	Paper
<b>Creativity:</b>	General

## Example from the 24 Item Preference Scale

Indicate to what degree you agree with each statement below.

**Strongly Agree**

**Strongly Disagree**

5      4      3      2      1

1. New ideas seldom work out.
2. Creative people generally seem to have scrambled minds
3. I don't have much time for thinking up wild ideas. I'm too busy just getting my job done.
4. In organizations, senior management should encourage ideas by demonstrating they are willing to act on them.

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#### **KEYS**

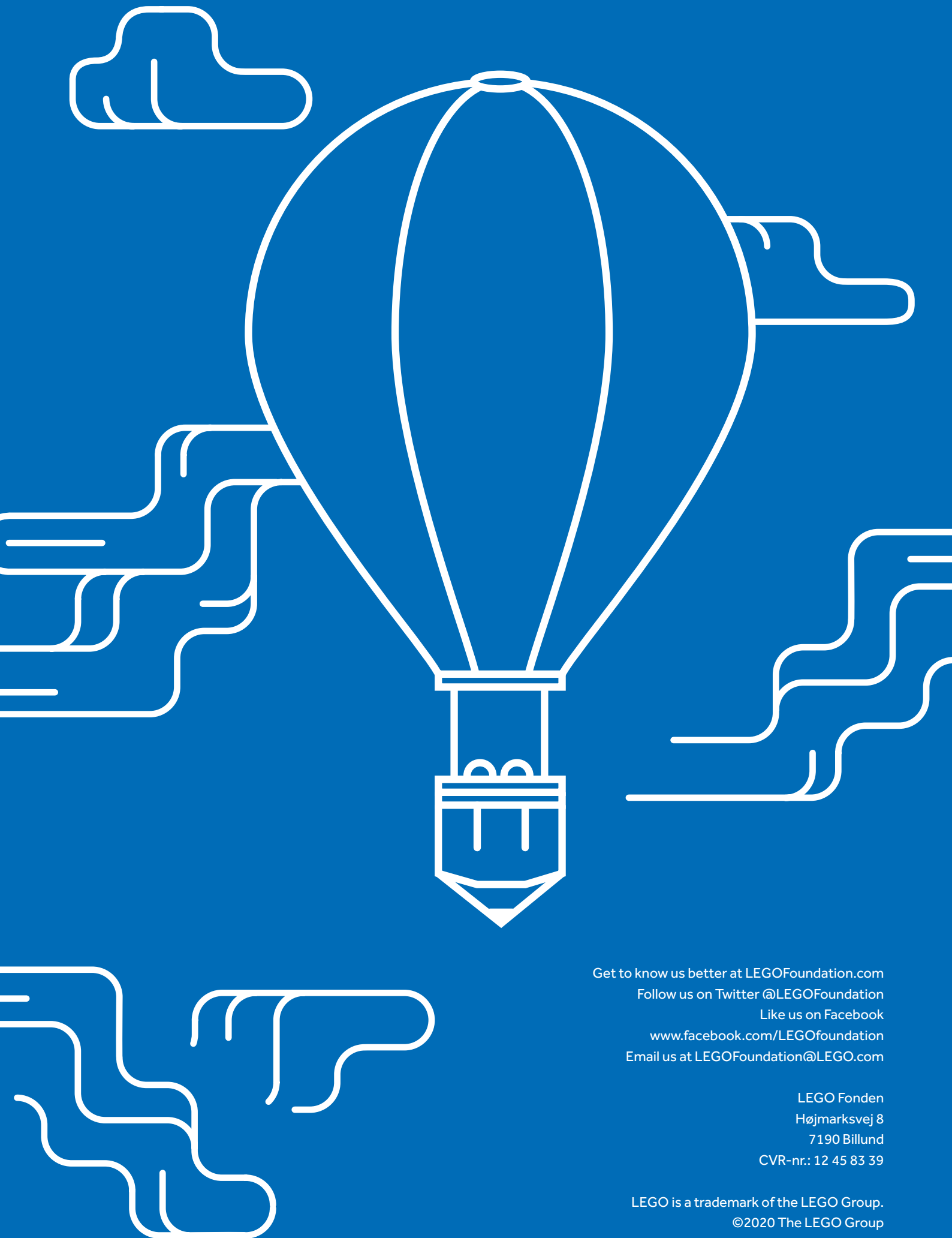
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