

Ideate\* with confidence. Take a weekly Inventamin™.

\*Ideate--to form an idea, imagine or conceive--*Webster's New World Dictionary*

Volume 0 Number 6

## Use inexpensive, disposable objects

If achieving the needed reliability is too costly, and failure does not produce dangerous, irreversible consequences, consider replacing an expensive object or system with a set of inexpensive objects or systems that will be replaced whenever they fail.

Examples:

- Scarecrows are used to replace the farmer to scare birds and rodents away.
- In order to reproduce, a tree bears many fruit, as does a fish spawn many young, ensuring at least a few will survive and continue the family line.
- Contact lenses can be lost or broken. Now we have disposable contact lenses.
- Often it is too expensive to provide metal cutlery that needs to be cleaned after use. A solution often seen is the provision of wooden or plastic forks and knives that fulfill their purpose and will be thrown away after use.
- Disposable lighters, pens, diapers, and facial tissues.

### Practice

Your Examples: What examples can you find of where this Inventamin™ has been used? Search for how or where the recommendation " Use inexpensive, disposable objects " might be used to improve or create something.

Identify non-technical applications of where " Use inexpensive, disposable objects " has been used. Identify natural applications where "Use inexpensive, disposable objects " occurs.

**Hint:** When working to solve an inventive problem we would like to find an "ideal" solution. The ideal solution means that everything remains the same, nothing changes, and the problem is solved. Rarely is this ever achieved, but it should be the innovator's objective. Resources (substances, energy, functions, information, space, time, etc.) that exist within the system are what we use to move toward the ideal goal. Understanding and revealing resources in your system helps you apply recommendations (Inventamins™), and provides a means for looking at the system in more detail. Some people do this naturally – but most people need some guidance. People who are great innovators or who have the ability to apply the Theory of Inventive Problem Solving, *TRIZ*, have mastered the art of revealing resources and recombining them in new ways to achieve innovative results.

**Lesson:** Think about what people see when they are looking for " Use inexpensive, disposable objects." Select an object. Look at it. Think about how " Use inexpensive, disposable objects " could be used to improve it. List several possible ways and write them down or draw them. Even those ideas that seem silly could turn out to be useful. Discuss your ideas with your partner or the class. Display drawings of your examples. Bring examples to share or display for the class.

### Invitation

Each week, you'll receive another Inventamin™ and an opportunity to practice using it. We ask you share your findings and/or ideas with us to help everyone become more innovative. We will include some examples submitted by the previous participants. Your participation is important – the object of receiving Inventamins™ is to learn to become more inventive and innovative and to practice, practice, practice.

Send us the name and email address of a colleague or friend who might be interested in subscribing to Inventamins™.

### How are people using Inventamins™?

Teachers are using them as innovation/creative homework assignments, enrichment, or enhancement exercises to provide weekly stimulation of student thinking

Friends are sharing them with friends

Parents are sharing them with children

And adults in all walks of life are using them to stimulate their own thinking

Send your observations, ideas and names to [inventamin@ideationtriz.com](mailto:inventamin@ideationtriz.com)

**Teacher Suggestions:** Use of the weekly Inventamin™ will vary considerably from teacher to teacher. Some prefer to use them in brief lessons at a regular time during the week. Some prefer to use them to fill in the end of a class. Some like to use them as a problem of the week to be posted on Monday and discussed on Friday. Some like to use them as homework assignments or enhancement and extra credit opportunities. A teacher's creative use of the inventive recommendation may also shape the lesson-- How would you use the Inventamin in your classroom?

### Additional Information

#### Lesson Plan(s)

**Title:** Application of Inventamins™

**Description:** Study and practice of the application of recommendations for creating and inventing.

#### Objective(s):

Students will know a variety of methods for extending creative and inventive thinking. Students will be able to apply methods for extending creative and inventive thinking by examining their world and identifying how they have been used in the past and by suggesting how they could be used to invent or create improvements in existing products or create new products.

**Grade Level(s):** 6 - 8

#### Connections to the Curriculum:

Inventamins™ connect to any part of the curriculum where there is an opportunity to:

- Have a different perspective or viewpoint
- Have an opportunity to be creative or inventive
- Explore the world around you

#### Connections to Standards & Benchmarks:

Standards and Benchmarks are from:

American Association for the Advancement of Science, *Benchmarks for Science Literacy*, NY, NY, Oxford University Press, 1993 : <http://www.project2061.org/tools/bsl/default.htm> or <http://www.aaas.org/education>

**Learning Styles:** A variety of learning styles can be accommodated when working with Inventamins™.

Sequential learners may wish to systematically apply the recommendation to items in their immediate environment.

Global learners may wish to think from their experience without systematic guidance.

Concrete learners may need things to feel and touch to examine examples of the recommendation.

Abstract learners may use models or sketches or ideas to explain their application of the recommendation.

**Materials Needed:** Handouts of the Inventamin™ or a single poster of the Inventamin™ for the bulletin board, made by printing the first page of the inventamin.

**Length of Topic/Project/Unit/Lesson:** Weekly during other units. The inventamin lessons can also be used during homeroom periods or special schedules.

**Assessment(s):** Portfolios of student responses are accumulated and displayed on the bulletin board

**Rubric:** Students and teacher design a rubric to assess their contributions to the pool of examples

**Extensions to the Unit:** An inventive project can be assigned in which the students identify the inventive recommendations that they used to invent their new product.