

## ***An Exercise in Creative Problem Solving and Constructive Thinking***

### **Background Information**

You work for a growing manufacturing firm that produces high-quality plastic parts for specialized applications. Your company is known not only for its quality and innovativeness but also for its progressive management and organizational practices.



# ***Critical Thinking Challenge™*** **Participant's Booklet** **Page Sample**

Copyright © 1970-2021 by Human Synergistics International. All Rights Reserved. No part of this work may be reproduced, stored in a retrieval system, transcribed in any form or by any means, including, but not limited to electronic, mechanical, photocopying, recording, or other means, without prior written permission of Human Synergistics International. Please direct correspondence to Human Synergistics International at 39819 Plymouth Road, Plymouth, MI 48170 U.S.A., (1.734.459.1030). *While we're not vengeful, we are provokable®.*

## Problem 1

On the input side of the production process, your employees cut sheets of a highly specialized plastic into four smaller pieces. (The original sheets are ½-inch-thick and measure 1 square foot each.) Two precise straight cuts are required to ensure that the four new pieces will be of equal size and weight. The smaller pieces are then melted down for use in the next step of the production process.

Your team's objective is to eliminate the need for two cuts and to come up with a procedure that requires only a single straight cut. The company that supplies you with the plastic could ship smaller pieces but would have to charge you a premium. However, the sales representative has advised you that it can supply you with the ½-inch-thick flat pieces in any shape you specify, and at no extra charge.

Your task is to specify a new shape for the sheets of plastic. The sheets must be designed so that a single straight cut will produce four smaller pieces of equal size, shape, thickness, and weight. Any shape is acceptable, but the current thickness must be maintained (which makes it impossible to bend, fold, or stack the material).



# ***Critical Thinking Challenge***<sup>™</sup> **Participant's Booklet** **Page Sample**

Copyright © 1970-2021 by Human Synergistics International. All Rights Reserved. No part of this work may be reproduced, stored in a retrieval system, transcribed in any form or by any means, including, but not limited to electronic, mechanical, photocopying, recording, or other means, without prior written permission of Human Synergistics International. Please direct correspondence to Human Synergistics International at 39819 Plymouth Road, Plymouth, MI 48170 U.S.A., (1.734.459.1030). *While we're not vengeful, we are provokable*<sup>®</sup>.

## *Creative Problem Solving and Constructive Thinking*

### **Strategies and Techniques**

#### ***Analogizing***

Restating the problem in terms of a different object or situation; identifying relevant similarities and parallels; and determining whether they suggest a solution.

#### ***Assumption breaking***

Examining the assumptions that are being made about a problem and possible solutions—and setting aside those that are invalid or inapplicable.

#### ***Brainstorming***

Generating as many ideas as possible (the wilder the better); building on and combining ideas; and withholding criticism until later.



# ***Critical Thinking Challenge***<sup>™</sup> **Participant's Booklet** **Page Sample**

Copyright © 1970-2021 by Human Synergistics International. All Rights Reserved. No part of this work may be reproduced, stored in a retrieval system, transcribed in any form or by any means, including, but not limited to electronic, mechanical, photocopying, recording, or other means, without prior written permission of Human Synergistics International. Please direct correspondence to Human Synergistics International at 39819 Plymouth Road, Plymouth, MI 48170 U.S.A., (1.734.459.1030). *While we're not vengeful, we are provokable*®.