

School Safety in Japan

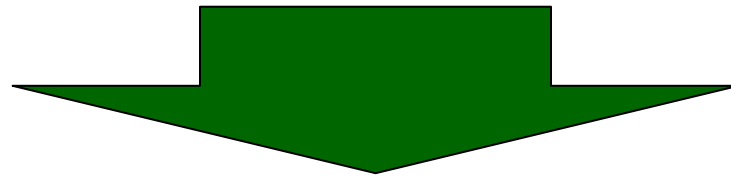
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Roles of School Facility

- Place for education of students
- Place for cultural and sporting activities of local community
- Place for evacuation in time of disaster



**Being safe against
earthquakes is indispensable**

Difference between New and Old Seismic Resistant Design

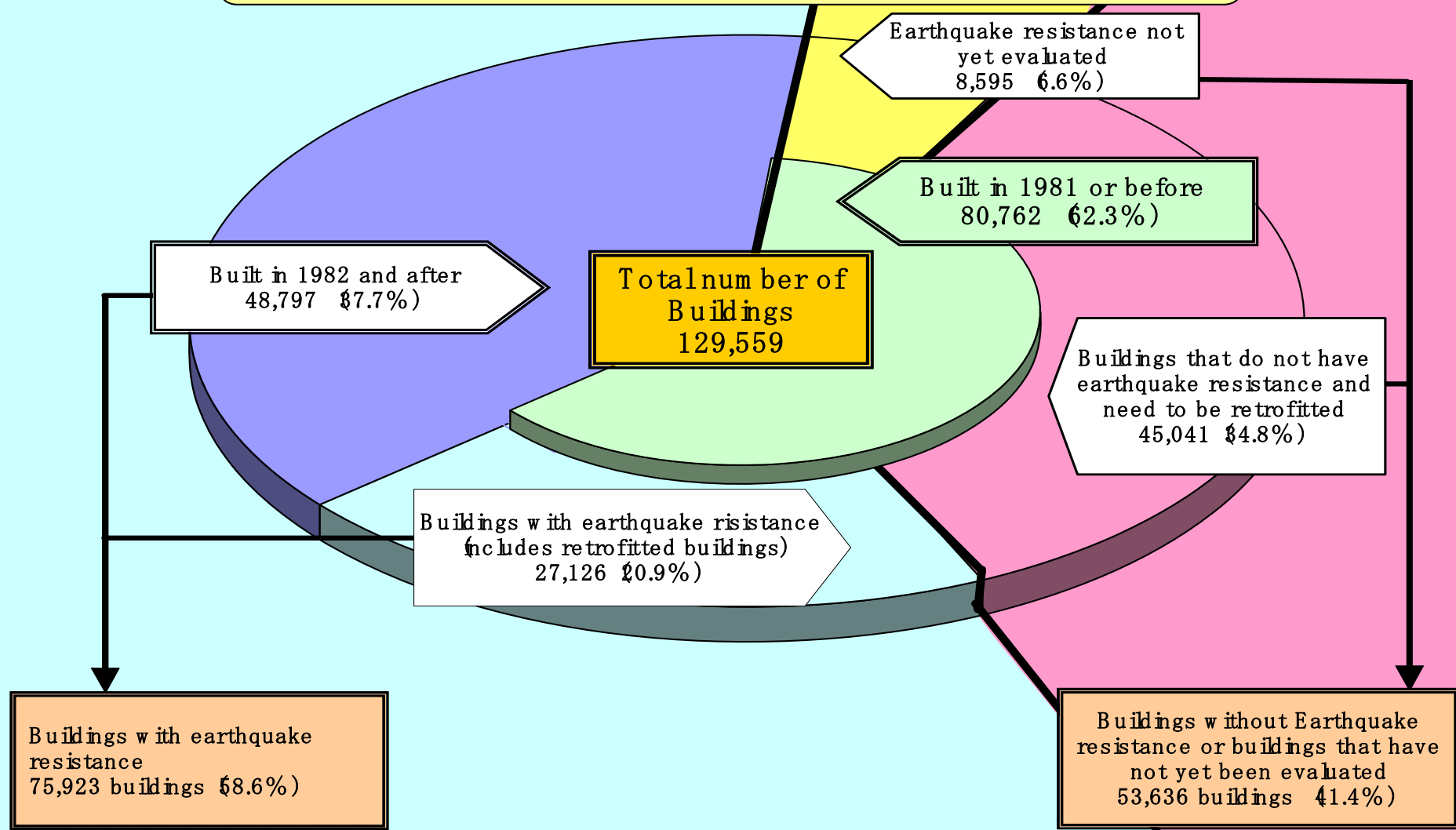
Type of Earthquake (* JMA Scale)	Medium Scale Earthquake (about 5 Upper)*	Large Scale Earthquake (over 6 Upper)*
Old Seismic Resistant Design (until 1981)	No major damage	Not verified
New Seismic Resistant Design (since 1981)	No major damage	Will not collapse

JMA Scale: A scale that indicates the strength of seismic motion formed by JMA (Japan Meteorology Agency)

5 Upper: Many people are considerably frightened and find it difficult to move

6 Upper: Impossible to keep standing and to move without crawling

The Status of Earthquake Resistance (Elementary and Lower Secondary Public Schools)



Subsidy Rate for Public School Facility

Type of Project	Subsidy Rate by MEXT
New construction	1/2
Reconstruction	1/3
Renovation	1/3
Seismic Retrofitting	1/2

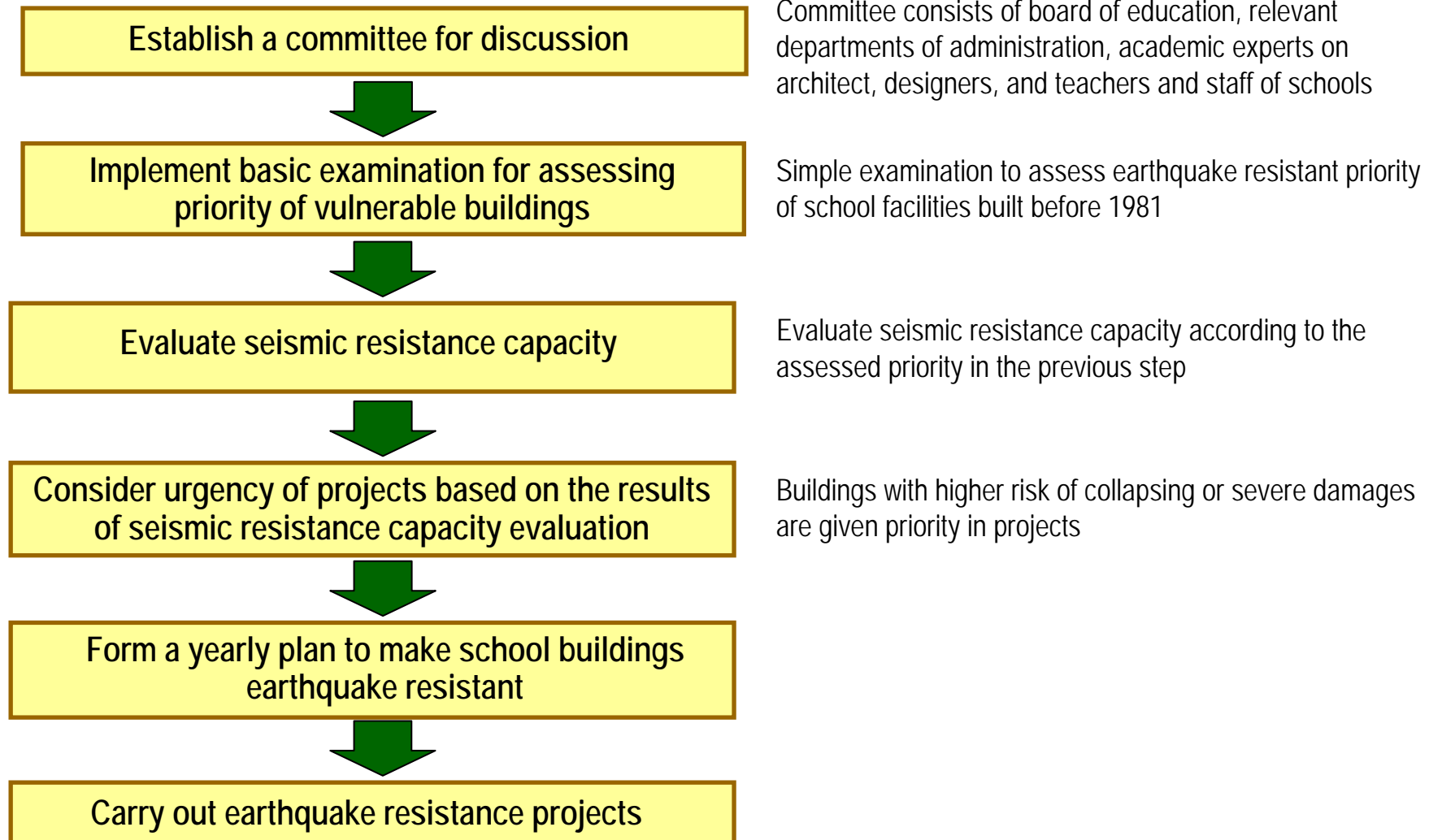
※ Budget for fiscal year 2007: 230 billion yen

“Guidelines for the Promotion of Earthquake-resistant School Buildings”

1. Basic Principles

- Prioritize earthquake resistance measures for school buildings with high risk of collapse or severe damage
- Promote the implementation of seismic resistance capacity evaluation
- Develop the plan for promoting earthquake resistance
- Disclose the results of the seismic resistance capacity evaluation and the plans for promoting earthquake resistance
- Check and take measures for the earthquake resistance of non-structural elements

2. Forming the plan for promoting earthquake resistance



Main Reinforcement Method

Steel frame brace



Reinforced concrete wall



Carbon fiber reinforcement

“S” lower secondary school (Shizuoka Pref.)



- 3,600 sqm / 4 stories
- SBR(outside) + RCW
- “Is” : 0.57 → 1.19
- About 150 million yen
- About 41,100yen/sqm
(only seismic retrofitting)



“S” elementary school (Chiba Pref.)



- 2,900 sqm / 4 stories
- SBR(outside) + RCW
- “Is” : 0.48 → 0.71
- About 455 million yen
- About 155,000yen/sqm
(with improvement in quality)



“T” upper secondary school (Niigata Pref.)



- 3,200 sqm / 3 stories
- SBR(inner side) + RCW
- “Is” :0.30 → 1.01
- About 174 million yen
- About 54,300yen/sqm
(only seismic retrofitting)



“S” elementary school gymnasium (Tokyo)



- 610 sqm
- Addition of steel braces
- “Is” : 0.56 → 1.21
- About 14 million yen
- About 22,000yen/sqm
(only seismic retrofitting)



Disaster Risk Education at School

(stipulated by MEXT)

(Table 1)

Stage	Curriculum
Elementary School (age: 7-12)	<p>Life (2nd grade): Public facilities and workers, for example, fire station and fire-fighters</p> <p>Science (5th grade): Work of running water</p> <p>Science (6th grade): Change of land influenced by volcanic eruptions, earthquakes and floods</p> <p>Health and physical education (5th grade): Prevention for injury</p> <p>Home economics (5th and 6th grade): Out-door cooking exercise</p>
Junior High School (age: 13-15)	<p>Science: Characteristics of volcanic eruptions and earthquakes</p> <p>Health and physical education: Injury prevention and first-aid in time of disaster</p> <p>Home economics: Out-door cooking exercise</p>
Senior High School (age: 16-18)	<p>Health and physical education: First-aid training in time of disaster</p> <p>Ethics: Dignity for life, Relationship with nature and science</p> <p>Science: Mechanism of volcanic eruptions and earthquakes</p> <p>Home economics: Cooking and living in time of disaster</p>

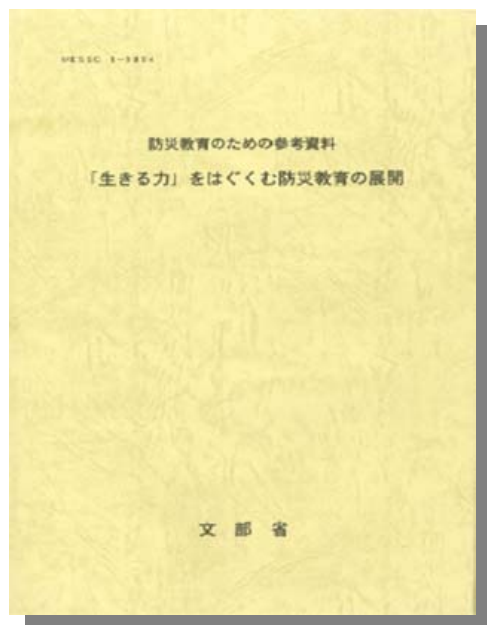
(Table 2)

Stage	Special activity	Special curriculum
Elementary School (age: 7-12)	Class activity: Instruction on health and security, etc. School event: Drill for evacuation in time of disaster,	For example: Investigation on disaster-proof house and no-disaster-proof house, Research on disasters and disaster preparedness,
Junior High School (age: 13-15)	Drill in case school becomes the evacuation space for local people, Visit to disaster prevention centre and fire station,	Cooking for survival in time of disaster, Research on mechanism of natural disasters,
Senior High School (age: 16-18)	Lecture of experts on natural disasters, Skill improvement for survival at camping, etc. Club activity: Science club activity, Meeting for security, Volunteer activity in time of disaster, etc.	Study on disasters occurred in Japan, Creation of picture book on natural disasters, Exercise for rescue and first-aid, Volunteer activity in time of disaster, etc.

Materials for Disaster Risk Education at School (published by MEXT)

For teachers

Reference book instructing how to teach disaster prevention at school



For students

Pamphlet on education for disaster prevention

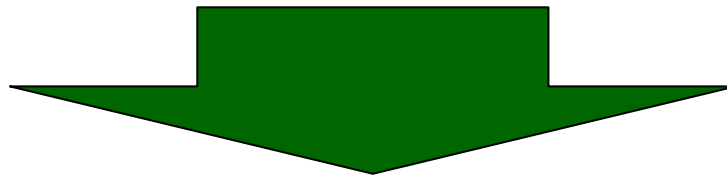
Title

- Think about our lives and security
- Think about disaster reduction, etc



Conclusion

School safety is everybody's business
to save our children



Let's make school buildings
earthquake resistant and
promote disaster risk education

Thank you for your attention !