What are the characteristics of a Japanese blackboard that promote deep mathematical understanding?

Japanese blackboards promote deep mathematical understanding because they (are) …

	Goal		**Characteristic**
1.	Appealing (draws students attention)	a.	Aesthetic / colorful
		b.	Large / visible
		c.	Neat
		d.	Includes visuals
2.	Well structured & organized	a.	Nothing extraneous
		b.	Coherent placement (L→ R, T → B)
		c.	Sequential
		d.	Headings / sections
		e.	Efficient use of space
3.	Planned out in advance (designed)	a.	Planned visuals
		b.	Anticipated solutions / contingencies
		c.	Planned layout
		d.	Prepared materials
4.	Represent student voices / ideas	a.	Showcase student work
		b.	Student identities
		c.	Student contributions
5.	Display rich & interpretable information	a.	Multi-modal
		b.	Explicit & detailed
		c.	Clarifications
		d.	Revoicing
6.	Help connect ideas	a.	Physical connection (arrows / color)
		b.	Juxtaposition / thoughtful placement
		c.	Use of movement
		d.	Same / comparable visuals or lesson elements
		e.	Labeling (for reference)
		f.	Synthesis
7.	Provide a “footprint” of the lesson	a.	Leaves a record
		b.	Traces development
		c.	No erasing

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